APPENDIX A

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

No. 90-70452

OLIN CORPORATION,

Petitioner,

v.

FEDERAL TRADE COMMISSION,

Respondent.

Argued and Submitted Oct. 11, 1991.

Decided Feb. 26, 1993.

Petition for Review of a Decision of the Federal Trade Commission.

Before: TANG, and TROT, Circuit Judges, and RUDI M. BREWSTER,* District Judge.

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* Honorable Rudi M. Brewster, United States District Judge for the Southern District of California, sitting by designation.

TANG, Circuit Judge:

Olin Corporation ("Olin" or "Company") petitions for review of an order of the Federal Trade Commission ("Commission") to divest assets acquired from the FMC Corporation ("FMC") and used to produce swimming pool sanitizing chemicals. The Commission ruled that Olin's acquisition of these assets would likely result in a substantial lessening of competition in the relevant markets in violation of section seven of the Clayton Act 15 U.S.C. § 18, and section five of the Federal Trade Commission Act ("FTC" Act), 15 U.S.C. § 45. We deny the petition for review.

I.

This case concerns competition among manufacturers of swimming pool sanitizing agents, which are used to kill algae and bacteria. We focus on three such sanitizers; two are chemicals sold in dry form, and the third is liquid pool bleach (sodium hypochlorite). The case is mostly about the two dry sanitizers, "ISOS" (short for "isocyanurates," of which there are two varieties: "dichlor" and "trichlor") and, secondly, "CAL/HYPO" (short for calcium hypochlorite). A fourth chemical is also involved: "CA" (short for cyanuric acid). CA is a precursor in the manufacturing process of ISOS and accounts for roughly 50% of the cost of ISOS production. CA is also used as a stabilizer in conjunction with the use of CAL/HYPO as a sanitizer.

Olin's dominance in the production and marketing of CAL/HYPO is not in question. Between 1980 and 1984, Olin's share of CAL/HYPO production in the United States

ranged from 79% to 89%. This case arises out of Olin's attempts to expand its capabilities to produce and market ISOS.

In the late 1970s, Olin approved construction of a four-part facility in Lake Charles, Louisiana. Three parts of the facility were designed to manufacture CA and the two forms of ISOS, dichlor and trichlor. The fourth part was a packaging plant. Olin, however, encountered technical problems in making CA; this part of the Lake Charles plant was shut down in 1980, and written off the following year. Both the dichlor and the packaging facilities were shut down in 1982. The remaining part of the Lake Charles facility dedicated to trichlor production remained in operation until 1984, with Olin obtaining the CA necessary to make trichlor from Nissan, a Japanese producer of both CA and ISOS.

In 1984, Olin entered a "tolling agreement" with Monsanto Company whereby Olin would provide certain ISOS precursors to Monsanto. In return, Monsanto would produce ISOS and provide them to Olin. Olin thus became a "repackager" of ISOS. At the same time, Olin "waterbatched" its Lake Charles trichlor facility, keeping it in a state of readiness but not using it.

In early 1985, Olin entered an agreement with FMC to buy that company's swimming pool chemical business. The assets of that business included FMC's manufacturing plant for sanitizers located at South Charleston, West Virginia, and technical know-how for the production of CA. The

South Charleston plant was composed of two production facilities, one each for ISOS and CA.[1]

The Commission began its challenge to the proposed acquisition in July 1985. To avoid an injunction against the acquisition, Olin agreed to maintain the acquired assets in a state which would permit divestiture in the event the Commission found the acquisition to be violative of the antitrust laws. Olin also agreed to a graduated withdrawal from its tolling agreement with Monsanto. As a result, the commission permitted Olin and FMC to consummate their transaction in August 1985.

In the order from which Olin has petitioned, the Commission substantially adopted the decision of the administrative law judge, including the ALJ's conclusion that the acquisition would violate federal antitrust law because it would likely result in a substantial lessening of competition in the relevant markets. The Commission also adopted the ALJ's proposed remedy of divestiture. Thus, the Commission ordered Olin to divest itself of all pool sanitizer assets acquired from FMC, except for "the Sulfolane process technology and know-how for the manufacture of [CA]." Olin filed a timely petition for review of the Commission's decision and order.

Olin raises four contentions. First, the Company argues that the Commission's finding that ISOS and CAL/HYPO

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[1] Olin views the CA production facility as a separate asset for which a separate antitrust analysis should apply. However, as we discuss below, the proper perspective is to view the acquisition as a whole. Whether Olin should be allowed to keep the CA facility is a question we leave for consideration along with the appropriateness of the divestiture remedy ordered by the Commission.

together constitute a relevant product market lacks substantial evidence. Olin also challenges on the same ground the Commission's finding that Olin's pre-acquisition share of the ISOS market did not substantially overstate Olin's significance as a competitor in the market for dry sanitizers. Third, Olin claims that the Commission's decision rejecting Olin's "exiting assets" defense is not supported by substantial evidence. Finally, the Company contends that the Commission's order to divest the South Charleston CA facility is not within its remedial discretion.

II.

We review the Commission's findings of fact, including its economic conclusions, under the substantial evidence standard. *FTC v. Indiana Fed'n of Dentists*, 476 U.S. 447, 454, 106 S.Ct. 2009, 2015, 90 L.Ed. 2d 445 (1986) ("*Indiana Dentists*") (review of factual findings under FTC Act); *Hospital Corp. of Am. v. FTC*, 807 F.2d 1381, 1384-85 (7th Cir. 1986) (review of factual findings, including Commission's economic judgments, under Clayton Act), *cert. denied*, 481 U.S. 1038, 107 S.Ct. 1975, 95 L.Ed.2d 815 (1987); *RSR Corp. v. FTC,* 602 F.2d 1317, 1320, 1325 (9th Cir. 1979) (review of factual findings, including Commission's economic judgment, under FTC Act), *cert. denied,* 445 U.S. 927, 100 S.Ct. 1313, 63 L.Ed. 2d 760 (1980); *see* 15 U.S.C. §§ 21(c), 45(c). Under this standard, "the court must accept the Commission's findings of fact if they are supported by such relevant evidence as a reasonable mind might accept as adequate to support a conclusion." *Indiana Dentists*, 476 U.S. at 454, 106 S.Ct. at 2015 (quotation omitted).

The legal issues presented—that is, the identification of governing legal standards and their application

> to the facts found—are, by contrast, for the courts to resolve, although even in considering such issues the courts are to give some deference to the Commission's informed judgment that a particular commercial practice is to be condemned as "unfair."

Id.

III.

Normally, "a delineation of proper geographic and product markets is a necessary precondition to assessment of the probabilities of a substantial effect on competition within them." *United States v. General Dynamics Corp.*, 415 U.S. 486, 510, 94 S.Ct. 1186, 1200, 39 L.Ed.2d 530 (1974); *accord Equifax, Inc. v. FTC*, 618 F.2d 63, 66 (9th Cir. 1980). There is no dispute in this case that the geographic market relevant to this case is the entire United States. The parties have further stipulated that one relevant United States product market consists solely of ISOS (the "ISOS-only" market). The commission also identified over Olin's objection a second relevant United States product market, one comprised of both ISOS and CAL/HYPO (the "dry sanitizers" market).

A.

Olin attacks the finding of a dry sanitizers market for two related reasons. First, in concluding that Olin's acquisition of FMC assets would likely have an anticompetitive effect, the Commission examined *in part* the acquisition's effect on the dry sanitizers market. Olin contends that the finding of likely anticompetitive effect is erroneous because it is premised on the existence of a relevant dry sanitizers market and because this market's existence is not supported by

substantial evidence. Even if Olin were correct in this assertion, however, the Commission also looked to the acquisition's effect on the ISOS-only market in finding a violation of the antitrust laws. The Commission did not state whether its ultimate conclusion concerning likely anticompetitive effect was dependent on analyses of both product markets, or on the analysis of one or the other. The Commission's finding of likely anticompetitive effect therefore might still be upheld based on the analysis of the ISOS-only market even if the finding of a dry sanitizers market is not supported by substantial evidence. The importance of Olin's challenge to the dry sanitizers market is thus questionable.[2]

The second reason for Olin's attack on the identification of a relevant dry sanitizers market concerns the decision in *United States v. General Dynamics Corp.*, 415 U.S. 486, 94 S.Ct. 1186, 39 L.Ed.2d 530 (1974). In *General Dynamics*, the Supreme Court held that under certain circumstances market share can overstate competitive ability. *Id.* at 501-03, 94 S.Ct. at 1195-97. Relying on *General Dynamics*, Olin argues that the Commission erred in using

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2 One apparent flaw in the Commission's analysis of the *ISOS-only market* lies in its conclusion that "[t]he level of concentration in the [ISOS]-only market proposed by Olin is . . . very high." In coming to this conclusion, the Commission did not provide any discussion similar to its analysis of the *dry sanitizers market*. In analyzing the post-acquisition *dry sanitizers market*, the Commission concluded that Olin's production capacity would be 57% of a market in which the "four-firm concentration ratio" was 95%. Nevertheless, there is evidence supporting the Commission's conclusion regarding likely anti-competitive effect on the ISOS-only market. It appears that Olin's post-acquisition share of production capacity in an ISOS-only market would be 48%, with a "four-firm concentration ratio" of 99.7%.

Olin's pre-acquisition share of the ISOS-only market to assess the acquisition's effect on competition. Olin contends this was error because its ISOS business was not viable before the acquisition.

Based on certain language appearing in the Commission's opinion, it appears the Commission may have considered Olin's pre-acquisition ISOS business *only* in assessing the acquisition's effect on the dry sanitizers market, and not in regard to the ISOS-only market. The language is as follows:

> *The relevant market is dry sanitizers*, rather than just [ISOS], and Olin was the number one producer in capacity and output in the market *for dry sanitizers* solely on the basis of its [CAL/HYPO] production. Nonetheless, because Olin's lead *in dry sanitizers* over the second largest domestic producer would be diminished if its [ISOS] capacity and output were excluded from the analysis of the market shares, the viability of Olin's [ISOS] business is significant in assessing its preacquisition market position.

(Emphasis added.) Thus, if the Commission erred in finding a relevant dry sanitizers market (as Olin contends), it becomes arguable that the Commission committed a fatal mistake in not considering the viability of Olin's pre-acquisition ISOS business before assessing the acquisition's effect in regard to the ISOS-only market.

Bearing in mind Olin's two reasons for attacking the Commission's finding of a relevant market in dry sanitizers, we turn to the basis for this finding, and to Olin's challenges.

B.

We recently described the process of product market definition as follows:

> "The outer boundaries of a product market are determined by the reasonable interchangeability of use or the cross-elasticity of demand between the product itself and substitutes for it." *Brown Shoe Co. v. United States*, 370 U.S. 294, 325 [82 S. Ct. 1502, 1524, 8 L.Ed.2d 510] (1962) (footnote omitted). Where an increase in the price of one product leads to an increase in demand for another, both products should be included in the relevant product market.

California v. American Stores Co., 872 F.2d 837, 841 (9th Cir. 1989) (citation modified), *rev'd on other grounds*, 495 U.S. 271, 110 S.Ct. 1853, 109 L.Ed.2d 240 (1990), *reinstated in relevant part*, 930 F.2d 776, 777 (9th Cir. 1991); *accord RSR Corp. v. FTC*, 602 F.2d 1317, 1320 (9th Cir. 1979), *cert. denied*, 445 U.S. 927, 100 S.Ct. 1313, 63 L.Ed.2d 760 (1980). Recognizing that, on the one hand, a change in one product's price has some infinitesimal effect on demand for every other product and, on the other hand, that products need not be fungible to be considered in the same market, the Supreme Court has cautioned that, "[i]n defining the product market between these terminal extremes, we must recognize meaningful competition where it is found to exist." *United States v. Continental Can Co.*, 378 U.S. 441, 449, 84 S. Ct. 1738, 1743, 12 L. Ed. 2d 953 (1964).

Within one market there may exist additional submarkets relevant for antitrust purposes. *RSR Corp.*, 602 F.2d at 1320. The boundaries of such markets are determined "'by

examining such practical indicia as industry or public recognition of the submarket as a separate economic entity, the product's peculiar characteristics and uses, unique production facilities, distinct customers, distinct prices, sensitivity to price changes, and specialized vendors.'" *RSR Corp.*, 602 F.2d at 1320-21 (quoting *Brown Shoe*, 370 U.S. at 325, 82 S. Ct. at 1524). Because every market that encompasses less than all products is, in a sense, a submarket, these factors are relevant even in determining the primary market to be analyzed for antitrust purposes. *See Continental Can Co.*, 378 U.S. at 449, 453-55, 84 S. Ct. at 1743, 1745-46.

To aid in product market definition, the Department of Justice has promulgated the "five-percent test." *See* United States Department of Justice, *Merger Guidelines – 1984* (introductory statement), *reprinted in* 4 Trade Reg.Rep. (CCH) ¶ 13,103, at 20551. Because this test is key to understanding many of Olin's arguments, we set out the Justice Department's description of the test:

> In general, the Department will include in the product market a group of products such that a hypothetical firm that was the only present and future seller of those products ("monopolist") could *profitably* impose a "small but significant and nontransitory" increase in price. That is, assuming that buyers could respond to an increase in price for a tentatively identified product group only by shifting to other products, what would happen? If readily available alternatives were, in the aggregate, sufficiently attractive to enough buyers, an attempt to raise price would not prove profitable, and the tentatively identified product group would prove to be too narrow.

[More s]pecifically, the Department will begin with each product (narrowly defined) produced or sold by each merging firm and ask what would happen if a hypothetical monopolist of that product imposed a "small but significant and non-transitory" increase in price. If the price increase would cause so many buyers to shift to other products that a hypothetical monopolist would not find it profitable to impose such an increase in price, then the Department will add to the product group the product that is the next-best substitute for the merging firm's product and ask the same question again. This process will continue until a group of products is identified for which a hypothetical monopolist *could profitably* impose a "small but significant and nontransitory" increase in price. *The Department generally will consider the relevant product market to be the smallest group of products that satisfies this test.*

. . . .

. . . In attempting to determine objectively the effect of a "small but significant and nontransitory" increase in price, the Department in most contexts will use a price increase of *five percent* lasting one year. However, what constitutes a "small but significant and nontransitory" increase in price will depend on the nature of the industry, and *the Department at times may use a price increase that is larger or smaller than five percent.*[7]

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7 For example, a larger increase may be appropriate[ ] if the "price" to be increased is a tariff or commission that constitutes a small fraction of the price of the product being transported or sold.

Id. § 2.11 (selected footnotes omitted) (emphasis added), *reprinted in* 4 Trade Reg. Rep. (CCH) ¶ 13,103, at 20556-57. To aid in applying this test, the Justice Department has indicated some of the circumstantial evidence relevant in assessing the likely effect of a price increase, given that it is "usually necessary" to infer such effects because direct evidence is not always available. *Id.*, *reprinted in* 4 Trade Reg. Rep. (CCH) ¶ 13,103, at 20557.[3]

In 1982, when the Department of Justice first announced the five-percent test, the Attorney General noted that the Merger Guidelines merely serve the purpose of determining what mergers the department will challenge. United States Department of Justice, *Merger Guidelines—1982* (Explanation and Summary), *reprinted in* 4 Trade Reg. Rep. (CCH) ¶ 13,102, at 20,528.

> The Attorney General emphasized that the guidelines are not a comprehensive statement of the circumstances considered by the Department in determining whether to challenge a merger. [Rather, t]heir purpose is to provide guidance to the business community, private lawyers and others in anticipating what standards will be used how they will be applied.

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[3] Since this case was submitted, the Justice Department and the Commission have jointly revised their merger guidelines. *See* Department of Justice and Federal Trade Commission, *Horizontal Merger Guidelines* (Apr.1992), reprinted in 4 Trade Reg.Rep. (CCH) ¶ 13,104. This revision has not substantially changed the five-percent test as it applies in this case. *Compare id.* § 1.1, reprinted in 4 Trade Reg.Rep. (CCH) ¶ 13,104, at 20,572-73 *with* United States Department of Justice, *Merger Guidelines—1984* § 2.11, *reprinted in* 4 Trade Reg. Rep. (CCH) ¶ 13,103, at 20556-57. *See generally* 4 Trade Reg.Rep. (CCH) ¶ 13,104, at 20,569.

Id., *reprinted in* 4 Trade Reg. Rep. (CCH) ¶ 13,102, at 20,528. Certainly the Guidelines are not binding on the courts, *see FTC v. PPG Indus.*, 798 F.2d 1500, 1503 n. 4 (D.C. Cir. 1986), or, for that matter, on the Commission.[4]

In conducting its product market analysis for swimming pool sanitizers, the Commission discussed physical composition, usage, and technical characteristics of dry sanitizers. At the outset, the Commission observed that similarities in these categories "predominate over the minor [physical] differences" between ISOS and CAL/HYPO. The following facts are particularly important: (1) Both products are used to deliver chlorine to swimming pools; (2) each product is able to deliver chlorine with about the same efficiency – although a pool chlorinated with ISOS will remain chlorinated longer; (3) by virtue of both products' stability and other characteristics, "a pool owner can purchase a year's supply of either [product] in a single trip to

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4 In 1982, the Commission issued its first set of merger guidelines. The stated purpose for doing so was "to express its collective judgment of the reasons why it supports changes in the 1968 [DOJ] Guidelines and to highlight the principal considerations that will guide its horizontal merger enforcement." *FTC Statement Concerning Horizontal Mergers pt.I (1982)*, *reprinted in* 4 Trade Reg.Rep. (CCH) ¶ 13,200, at 20,901. The Commission guidelines did not refer to the five-percent test, though they did indicate that "the Department of Justice's 1982 revisions to the 1968 Guidelines will be given considerable weight by the Commission." *Id.*, *reprinted in* 4 Trade Reg.Rep. (CCH) ¶ 13,200, at 20,901. Of course, the Commission has now embraced the five-percent test. *See supra* note 3.

the store"; and (4) both products are available to consumers in the same forms.[5]

Despite these similarities, however, ISOS are perceived as more convenient than CAL/HYPO because, once applied, ISOS last longer than CAL/HYPO, and because CAL/HYPO requires use of a separate stabilizer (i.e., CA). Recognizing that the "convenience of [ISOS] is reflected in a price premium that [ISOS] maintain over [CAL/HYPO]," the Commission then analyzed whether this premium is sufficient to prevent inclusion of ISOS and CAL/HYPO in the same market. *Cf. United States v. Aluminum Co. of Am.*, 377 U.S. 271, 276, 84 S.Ct. 1283, 1287, 12 L.Ed.2d 314 (1964) ("to ignore price in determining the relevant line of commerce [when products stand distinctly apart pricewise] is to ignore the single, most important, practical factor in the business"). Ultimately, the Commission concluded that "[a]fter the price spread between [CAL/HYPO] and [ISOS] narrowed, Olin could not profitably impose a small but significant and nontransitory increase in the price of [CAL/HYPO] because of the danger that consumers would then switch to [ISOS]." Given this indication of cross-elasticity of demand, the Commission concluded that ISOS and CAL/HYPO together compose a relevant product market (i.e., the dry sanitizers market).

Olin attacks this conclusion on three grounds: (1) the existence of a relevant ISOS-only market precludes the existence of a dry sanitizers market; (2) the Commission's

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[5] In discussing these characteristics, the Commission apparently assumed that the relevant market is defined in terms of consumers who maintain their own pools. Although Olin challenges this assumption, we conclude there is substantial evidence in support of dealing with residential consumers as a distinct market.

cross-elasticity analysis is faulty and lacks substantial evidence; and (3) the Commission erred in excluding liquid pool bleach from a market that includes both ISOS and CAL/HYPO.

1. *Legal Effect of Recognizing an ISOS-Only Market*

Olin argues that it is inconsistent to recognize a larger, dry sanitizers market once a relevant ISOS-only market has been identified. While this may be true under the Department of Justice Merger Guidelines, it is not true as a matter of federal antitrust law.

By stating that "[ISOS] buyers, when faced with a small but significant and non-transitory price increase, would not shift to [CAL/HYPO] in sufficient numbers to make the increase *unprofitable*," the Commission essentially states that ISOS compose a relevant market under the Merger Guidelines. Because the Guidelines also indicate that "[t]he Department generally will consider the relevant product market to be the smallest group of products that satisfies [the five-percent] test," it may be contradictory under the Department's guidelines to define a second relevant market as including both ISOS and CAL/HYPO.

However, relevant submarkets are common in merger analysis. *See RSR Corp.*, 606 F.2d at 1320 ("well-defined submarkets may also exist which, in themselves, can constitute product markets for antitrust purposes"). Recognizing ISOS as a submarket of the dry sanitizers market is not inherently contradictory with recognizing a dry sanitizers market. *See also United States v. Aluminum Co. of Am.*, 377 U.S. 271, 274-77, 84 S.Ct. 1283, 1285-87, 12 L.Ed. 2d 314 (1964) (finding a broader market composed of bare and insulated aluminum conductor products after parties

had agreed to, and district court found, a relevant market in bare aluminum conductor alone).

2. *Cross-Elasticity Between ISOS and CAL/HYPO*

Olin charges that the Commission had no basis on which to conclude that any significant degree of elasticity existed between ISOS and CAL/HYPO. Specifically, Olin makes two arguments: (a) that the Commission misunderstood the Merger Guidelines "five-percent test," and (b) that the Commission's inferences concerning cross-elasticity were not supported by substantial evidence.

a. The Five Percent Test

In order for a dry sanitizers market to be recognized as "relevant" under a typical application of the Department of Justice Merger Guidelines, a 5% increase in the price of CAL/HYPO must cause enough CAL/HYPO consumers to switch to ISOS to make the price increase unprofitable for the hypothetical CAL/HYPO monopolist. The Guidelines suggest that the time period within which the switch must occur is one year. *See* United States Department of Justice, *Merger Guidelines – 1984* § 2.11, *reprinted in* 4 Trade Reg. Rep. (CCH) ¶ 13,103, at 20557.

Olin argues that, in order to find cross-elasticity, it was necessary for the Commission to do two things: first, to ignore the allegedly artificial nature of an established narrowing in the price gap between the two products before applying the hypothetical 5% increase and, second, to extend the time period in which the switch between products would be measured.

It is evident from its opinion that the Commission relied on a narrowing of the price gap between the two products in determining cross-elasticity. The opinion described this

narrowing as follows: "during the period from 1977 to 1983, . . . the price of [CAL/HYPO] increased at a faster rate than that of [ISOS]."[6] According to the opinion, this increase in the price of CAL/HYPO came about *despite* direct competition from Japanese CAL/HYPO, which was later the subject of an "antidumping" order.

Olin argues that the narrowing of the price gap between CAL/HYPO and ISOS was artificial—and should not be included in determining cross-elasticity—because the Japanese were "dumping" ISOS on the American market. The Commission responds convincingly that, because CAL/HYPO was subject to the same pressures as the result of Japanese CAL/HYPO dumping, the narrowing in price

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6 The Commission has provided the following table:

	PRICE PER POUND			SHARES OF PRIMARY USAGE		
	ISO'S*	HTH**	HTH/ ISO'S	ISO'S	HTH	HTH/ ISO'S
1977	$1.04	.57	55%	41%	42%	102%
1978	1.13	.62	55%	41%	42%	102%
1979	1.17	.63	54%	42%	42%	100%
1980	1.15	.76	66%	45%	39%	87%
1981	1.15	.88	77%	49%	34%	69%
1982	1.20	.98	83%	54%	29%	54%
1983	1.20	.98	83%	N/A	N/A	N/A

* PRICE TO REPACKER; ** CARLOAD PRICE TO HTH DISTRIBUTOR

"HTH" referred to in the chart, is Olin's brand of CAL/HYPO. The chart shows that, over time, as the price of CAL/HYPO increased relative to ISOS, more and more people switched to ISOS. Olin disputes whether this is truly evidence of cross-elasticity, in view of the fact that the Japanese were dumping ISOS on the American market, and that the switch from CAL/HYPO to ISOS occurred over several years.

was not artificial. Olin ignores this explanation and shifts its focus to the Commission's concession that CAL/HYPO consumers would not switch to ISOS until the price of CAL/HYPO had risen at least 10%.

Despite Olin's attempt to emphasize the 5% factor normally used by the Department of Justice, research has not disclosed a case that mandates this percentage, let alone one that requires that the courts employ the Department of Justice methodology for determining relevant product markets. Indeed, the Department of Justice itself acknowledges that a higher percent increase in price is appropriate in determining the relevant product market in certain cases. *See* United States Department of Justice, *Merger Guidelines – 1984* § 2.11 n.7 & accompanying text, *reprinted in* 4 Trade Reg. Rep. (CCH) ¶ 13,103, at 20557. Thus, a finding of cross-elasticity between ISOS and CAL/HYPO is not precluded by the fact that a higher price increase is necessary to induce a switch; a higher increase indicates only that the relationship between the two products is somewhat inelastic – but not necessarily so inelastic as to exclude the products from the same market, particularly under the substantial evidence standard of review.

Olin's other challenge to the Commission's application of the Merger Guidelines is that the Commission looked at too long a period of time in assessing whether consumers would switch products after a price increase. We find this argument unpersuasive in view of the Commission's response that it made its determination with regard to consumer reaction over a one year period and the Supreme Court's statement that competitiveness over the long-run can be important, even when "interchangeability of use may not

be so complete and the cross-elasticity of demand not so immediate." *United States v. Continental Can Co.*, 378 U.S. 441, 455, 84 S.Ct. 1738, 1746, 12 L.Ed.2d 953 (1964).

b. Supporting Evidence

Olin also attacks the two pieces of circumstantial evidence on which the Commission relied in finding cross-elasticity of demand between ISOS and CAL/HYPO: a statement Olin made to the International Trade Commission ("ITC"), and a statement made by an Olin competitor indicating a competitive relationship between CAL/HYPO and ISOS.

Specifically, the Commission relied in part on the following statement made by Olin to the ITC in the course of trying to combat Japanese imports of CAL/HYPO:

> We recognize that the domestic [CAL/HYPO] industry faces increased competition from other pool chemical products, particularly from [ISOS]. [ISOS], however, traditionally have been priced substantially above [CAL/HYPO] products. As the price of [ISOS] dropped in recent years, in large part due to Japanese dumping of that product, some consumers have chosen to purchase that product instead of either domestic or foreign-made [CAL/HYPO].

Olin argues that this statement indicates only that Japanese dumping of ISOS was responsible for the narrowing of the price gap between ISOS and CAL/HYPO and, because this narrowing was artificial, the statement says nothing about the competitive relationship between the two products. However, as previously mentioned, the fact that CAL/HYPO was also dumped on the market indicates that other factors may have been at work in reducing the price

gap between the products. Indeed, Olin's statement implicitly acknowledges that other factors played at least some part in reducing the gap. The Commission thus could have relied on this statement to provide some support for its conclusion that ISOS and CAL/HYPO were in the same market.[7]

The other piece of evidence attacked by Olin is a statement of Olin's CAL/HYPO competitor, PPG: "Consumption of [CAL/HYPO] as a swimming pool sanitizer can be affected by [ISOS] consumption." Olin again charges that such statements are irrelevant because they say nothing about whether "[ISOS] demand can be affected by small price increases in [CAL/HYPO] over a short period of time," and because such statements are based on the supposedly artificial effect induced by Japanese ISOS dumping. For the previously stated reasons, these arguments are not persuasive.

Finally, Olin argues that even if the PPG statement indicates that the swimming pool sanitizer industry recognized a competitive relationship between ISOS and CAL/HYPO, the Commission failed to cite evidence that pricing decisions were made based upon this relationship. The Commission, however, did cite evidence indicating that business decisions were based on the recognized relationship. Indeed, Olin's own business decisions were

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[7] It appears that the Commission regards the narrowing in the price gap as indicative of what would happen in a truly competitive market. Olin, on the other hand, argues that the reduced gap in price was artificial and that, once dumping was stopped in 1984, the gap widened to its "traditional" level. Whether the competitive effects of the antidumping orders can be accurately assessed, however, is uncertain given that the acquisition here in question was arranged within a year of the antidumping orders, and was consummated soon thereafter.

based in part on the goal of maintaining the price relationship between CAL/HYPO and ISOS. From this goal, it can easily be inferred that pricing decisions were based on the competitive relationship between the two products.

In sum, we find adequate support for the Commission's finding of cross-elasticity between ISOS and CAL/HYPO.

3. *Exclusion of Liquid Pool Bleach*

Finally, Olin attacks the exclusion of liquid pool bleach from a market composed of ISOS and CAL/HYPO. Olin essentially argues that the only rational basis for including CAL/HYPO and ISOS in the same market is that both products are used to sanitize swimming pools. If this is the determinative criterion, Olin continues, then liquid pool bleach must also be included in the relevant market.[8]

Even accepting Olin's argument that there is a relevant market comprised of all pool sanitizers, this does not preclude identification of a relevant submarket comprised solely of dry sanitizers. *See, e.g.*, *Continental Can*, 378 U.S. at 457-58, 84 S. Ct. at 1747-48; *RSR Corp.*, 602 F.2d at 1320 ("well-defined submarkets may also exist which, in themselves, can constitute product markets for antitrust purposes"). The remaining question is whether the Commission considered relevant and substantiated factors in delineating a dry sanitizers submarket.

As stated previously, "'practical indicia [such] as industry or public recognition of the submarket as a separate economic entity, the product's peculiar characteristics and

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8 Olin's efforts to include liquid pool bleach in the relevant product market are intended to undermine the Commission's reliance on a dry sanitizers market in ordering divestiture.

uses, unique production facilities, distinct customers, distinct prices, sensitivity to price changes, and specialized vendors,'" *RSR Corp.*, 602 F.2d at 1320-21 (quoting *Brown Shoe Co. v. United States*, 370 U.S. 294, 325, 82 S. Ct. 1502, 1524, 8 L. Ed. 2d 510 (1962)), are to be considered in determining whether a relevant submarket exists for antitrust purposes.

The Commission cites several plausible reasons to separate liquid pool bleach from the dry sanitizers in defining a relevant market: Most pool bleach is consumed in discrete geographic regions; liquid pool bleach is inconvenient because a season's worth cannot be bought in one trip to the store, and because bleach spills can damage clothing and car interiors; liquid bleach is less expensive than dry sanitizers; and liquid pool bleach is sold predominately to pool service companies rather than to those who maintain their pools themselves.

The Commission also discussed cross-elasticity of demand between dry sanitizers and liquid pool bleach, concluding that "circumstantial evidence indicates a low degree of substitution between dry and liquid sanitizers." Based on the foregoing, the Commission was justified in identifying a relevant dry sanitizers submarket which excluded liquid pool bleach.

4. *Conclusion*

Having considered the parties' arguments, we conclude that there is substantial evidence on which the Commission could base its identification of a relevant "dry sanitizers" market composed of ISOS and CAL/HYPO.

IV.

The decision in *United States v. General Dynamics Corp.*, 415 U.S. 486, 94 S. Ct. 1186, 39 L. Ed. 2d 530 (1974), emphasizes that market shares may not disclose the true competitive ability of a firm. In *General Dynamics*, the government challenged the acquisition of United Electric Coal Companies by Material Services Corporation (which, in turn, was later acquired by General Dynamics Corporation). *Id.* at 489-90, 94 S. Ct. at 1190-91. The government charged that, based on market share, the United Electric acquisition substantially lessened competition in the production and sale of coal. *Id.* at 490, 494-96, 94 S. Ct. at 1190, 1192-93. The Court disagreed, concluding that, while the merger did result in an entity possessing a suspect market share, *id.* at 496, 497-98, 94 S. Ct. at 1193, 1193-94, the acquisition could not substantially lessen competition because United Electric was virtually unable to compete in the present-day market, *id.* at 502-03, 94 S. Ct. at 1196. Although it was producing coal, the company was "facing the future with relative depleted resources at its disposal, and with the vast majority of those resources already committed under contracts allowing no further adjustment in price." *Id.* at 503, 94 S. Ct. at 1197. "[I]ts current and future power to compete for subsequent long-term contracts was severely limited by its scarce uncommitted resources." *Id.* (footnote omitted).

Based on the *General Dynamics* case, Olin argued to the Commission that the Company's pre-acquisition share of the ISOS market was not indicative of market power because Olin's pre-acquisition ISOS business was not viable. As Olin has emphasized, the Commission accepted this argument as relevant, even though the largest components

of Olin's post-acquisition share of the dry sanitizers market would be Olin's pre-acquisition CAL/HYPO business, and FMC's pre-acquisition ISOS business.[9] Thus, the Commission undertook to decide whether in fact Olin's pre-acquisition ISOS business was "non-viable" in some manner analogous to the United Electric business acquired in *General Dynamics*. The Commission concluded that no such analogy applied.

Initially, Olin argues that the Commission improperly shifted the burden of proof in determining whether Olin's pre-acquisition ISOS business was viable. Olin's sole basis for this argument is language appearing in the Commission's opinion such as: "Olin has not made a persuasive showing" and "Olin has not pointed to solid evidence" in support of its viability argument. This is hardly solid ground on which to argue the Commission unfairly saddled Olin with an impermissible burden.

Nevertheless, in support of its argument, Olin cites *United States v. Baker Hughes, Inc.*, 908 F.2d 981 (D.C. Cir. 1990) (Thomas, J.), in which the government brought an action under section seven of the Clayton Act based on a merger of drilling rig companies. *See id.* at 982. After the government established a prima facie case of probable anti-competitive effect based on statistical evidence of market

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[9] On appeal, the Commission argues that, even if Olin's pre-acquisition ISOS market share is excluded from the analysis of the dry sanitizers market and only its pre-acquisition CAL/HYPO business and FMC's pre-acquisition ISOS business are considered, the merger would still violate federal antitrust law. Although the ALJ apparently agreed, the Commission did not explicitly consider this argument in its opinion. Therefore, we will not review it here.

share, the defendants successfully rebutted the government's showing, apparently by introducing sufficient evidence that the market was easily entered. *Id.* at 983.[10] In response, "[t]he government did not produce any additional evidence showing a probability of substantially lessened competition, and thus failed to carry its ultimate burden of persuasion." *Id.* On appeal, the government argued that the district court erred in allowing the defendants to rebut the prima facie case by less than a "clear showing." *Id.* (emphasis added).[11] The court rejected this argument.

The clearest reason why *Baker Hughes* does not control here is that the Commission responded to the Company's rebuttal, whereas in *Baker Hughes* the government did not. *Cf. id.* at 983. In the present case, the Commission pointed to evidence indicating why Olin's viability argument should fail. The Commission is able to do this because it is Olin's burden to rebut a prima facie case of illegality. *See California v. American Stores Co.*, 872 F.2d 837, 842 (9th Cir. 1989), *rev'd on other grounds*, 495 U.S. 271, 110 S. Ct. 1853, 109 L. Ed. 2d 240 (1990), *reinstated in relevant part*, 930 F.2d 776, 777 (9th Cir. 1991). In any event, whether the Commission applied an incorrect standard in assessing the rebuttal is difficult to say; certainly the Commission is not seeking to have this court adopt a higher standard, as the government was in *Baker Hughes*.

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10 Ease of market entry is relevant in antitrust cases because even a monopolist will not be able to exercise power over price in a market that is easily entered by potential competitors. The assumption is that, in an easily entered market, an artificial increase in price will entice bystanders to enter the market, eventually restoring competitive conditions.

11 Interestingly, as in the present case, the lower tribunal in Baker Hughes did not explicitly indicate what standard it had applied in assessing the defendants' rebuttal. See 908 F.2d at 983.

As a preface to discussing Olin's remaining "viability" arguments, we observe that the essence of the *General Dynamics* decision is that, as the result of certain circumstances, the "current and future power" of the acquired company—United Electric—"to compete for subsequent long-term contracts was severely limited by its scarce uncommitted resources." 415 U.S. at 503, 94 S. Ct. at 1197. At the heart of the Commission's decision rejecting Olin's viability argument is the belief that Olin's pre-acquisition ISOS business was *not* in a position analogous to United Electric's. The best reason for this belief is evidence that Olin was able to obtain as much CA as it wished from Nissan. Olin's arguments that this supply was flawed because its price was not competitively determined are not plausible in view of Olin's past ability to obtain price concessions from Nissan and Olin's eventual decision to opt for an even more expensive arrangement by having Monsanto supply Olin as a "repackager" of ISOS. Olin's resources do not appear to be limited in a manner which made it an ineffective ISOS competitor prior to the acquisition of the FMC assets.

Olin also challenges on three other grounds the Commission's finding that the Company's pre-acquisition ISOS business was viable and should be included in determining the acquisition's effect on competition.

Olin first argues that the viability of its pre-acquisition ISOS business depends on its ability to manufacture for itself the ISOS precursor, CA (i.e., cyanuric acid). The one case to which Olin cites for this proposition, *B.F. Goodrich Co.*, 110 F.T.C. 207 (1988), in no way supports the Company's argument. As the Commission points out, and as Olin concedes, the Company relies not on a holding of

the Commission, but on a party's argument which, Olin contends, the Commission endorsed. Even so, the argument presented in *B.F. Goodrich* does not help Olin because it dealt with the question whether a precursor chemical, such as CA, could be considered as a relevant market when a separate market for the industry's end-product fully reflected the competitive relationships existing among industry participants. The present case is obviously not concerned with whether CA could compose a relevant market, or whether Olin's acquisition would impact that market.

Olin's next argument is that it is inconsistent for the Commission to conclude that the Company's pre-acquisition ISOS business was viable without a captive CA supply and, at the same time, to order divestiture of the South Charleston CA plant, together with an ISOS plant, on the ground that the CA plant is necessary "to ensure the viability of the divested entity." The key word here, however, is "ensure"; the Commission did not conclude that a captive CA supply was essential to viability. Nor did the Commission conclude a captive CA supply was essential, as Olin suggests, when the Commission remarked that Olin's efforts to secure a source of CA indicated that entry into the ISOS market was difficult.

Olin's final contention here is somewhat more obscure. The Company emphasizes its technical problems in developing CA production and mentions its alleged financial difficulties. However, Olin later disclaims any argument that the weakened financial condition of its pre-acquisition ISOS business is relevant. The argument thus

boils down to Olin's technological abilities. Having concluded that a captive source of CA is not essential to a viable ISOS business, we find Olin's arguments concerning its ability to produce CA unpersuasive. The one decision on which Olin relies is equally unavailing.

In *United States v. Consolidated Foods Corp.*, 455 F. Supp. 108, 136-37 & n.19 (E.D. Pa. 1978), the court focused on technical difficulties affecting the quality of the product ultimately brought to market. Olin, however, asks us to look at technological problems affecting one means of producing the marketed product—a means for which Olin found alternatives in the forms of Nissan CA and, later, Monsanto ISOS. We decline the invitation to extend the *Consolidated Foods* analysis to the present case. Instead, we conclude the Commission was justified in its decision to include Olin's pre-acquisition ISOS business in determining the probability of anticompetitive effects stemming from Olin's acquisition of FMC ISOS assets.

V.

The Supreme Court has recognized a "failing company" defense to anticompetitive mergers. "A company invoking the defense has the burden of showing that its 'resources [were] so depleted and the prospect of rehabilitation so remote that it faced the grave probability of a business failure . . .,' *International Shoe Co. v. FTC*, 280 U.S. 291, 302 [50 S. Ct. 89, 93, 74 L. Ed. 431] (1930), and further that it tried and failed to merge with a company other than the acquiring one." *United States v. General Dynamics Corp.*, 415 U.S. 486, 507, 94 S. Ct. 1186, 1198, 39 L. Ed. 2d 530 (1974) (footnote omitted; citations modified and omitted). There is no dispute in this case that FMC's ISOS business

was successful, although it may not have met the company's expectations. Olin therefore cannot rely on a "failing company" defense.

Instead, Olin advances a novel "exiting assets" defense. "The key element of such a defense is proof that, without the merger, the assets owned by the acquired firm would *shortly* be leaving the market." John E. Kwoka, Jr. & Frederick R. Warren-Boulton, *Efficiencies, Failing Firms, and Alternatives to Merger: A Policy Synthesis*, 31 Antitrust Bull. 431, 446 (1986) (emphasis added). The Commission indicated that it was not inclined to recognize this defense; nevertheless the Commission reviewed Olin's factual arguments. The burden of proof is undoubtedly on Olin to established any such defense. *Cf. General Dynamics*, 415 U.S. at 507, 94 S. Ct. at 1198.

Regarding Olin's defense, the Commission concluded as follows:

> [T]he evidence does not establish that FMC made the decision to close [its ISOS] business in the near future. Quite the contrary, the record indicates that FMC's management continued to operate the facility in the expectation that the facility could at some point be sold. In addition, the record does not contain evidence that FMC's management had conducted an exhaustive effort to sell the package of assets sold to Olin. The record contains no indication that no less anticompetitive alternative to the merger is available.

On appeal, Olin attacks only the second finding: the existence of less anticompetitive alternatives. Yet the first finding—that the assets would not be exiting the relevant

market "shortly"—is sufficient to sustain the Commission's ruling that Olin did not establish an "exiting assets" defense. This finding is supported by substantial evidence.

VI.

Olin concedes that the Commission has broad discretion to cope with any unlawful practices disclosed by the record, but argues that the Commission's order that Olin divest the South Charleston CA facility acquired from FMC is not reasonably related to the unlawful practice found here. The Commission, however, reasoned that the CA facility must be divested together with a related ISOS facility in order to ensure the viability of the divested entity as an ISOS producer. This reasoning is consistent with the Commission's conclusion that entry into the ISOS market is difficult without a captive supply of CA.

Furthermore, as the Commission pointed out, there is no indication that FMC would have sold its CA plant apart from the rest of its ISOS assets. Olin does not dispute this, nor does the Company point to evidence that the two facilities, which are located at the same plant, can be separated in the manner suggested by Olin. The divesture remedy ordered by the Commission is thus within the range of properly exercised discretion.

VII.

The petition for review is DENIED.

APPENDIX B

UNITED STATES OF AMERICA
BEFORE FEDERAL TRADE COMMISSION

COMMISSIONERS: Janet D. Steiger
Terry Calvani
Mary L. Azcuenaga
Andrew J. Strenio, Jr.
Deborah K. Owen

Docket No. 9196

In the matter of
OLIN CORPORATION,
a corporation.

OPINION OF THE COMMISSION

By Azcuenaga, Commissioner:

I. INTRODUCTION

Olin Corporation, the leading domestic producer of dry swimming pool sanitizers, acquired FMC Corporation's swimming pool chemical business. Finding that the merger was likely to produce a substantial lessening of competition in the relevant markets in violation of Section 7 of the Clayton Act and Section 5 of the Federal Trade Commission Act, the Administrative Law Judge ordered divestiture. We affirm.

A. *Background*

On February 7, 1985, Olin Corporation ("Olin") signed a letter of intent to acquire the assets that constituted the swimming pool chemical business of FMC Corporation ("FMC"). The price was $49.5 million, subject to inventory and other adjustments. The assets included FMC's production facility for swimming pool sanitizers at South Charleston, West Virginia, a repacking plant at Livonia, Michigan, the brand names used by FMC, the technology for the production of cyanuric acid and a fifty percent interest in a British affiliate.

On July 18, 1985, the Federal Trade Commission issued a complaint challenging the transaction, and on July 20, 1985, Olin and the Commission entered an asset maintenance agreement. Under that agreement, Olin is required to maintain and manage the acquired assets to preserve the Commission's ability to order divestiture if that should prove to be appropriate at the end of the administrative proceeding, and the Commission agreed not to seek a federal court injunction against consummation of the transaction pending the outcome of the administrative proceeding. The acquisition was consummated on August 16, 1985.

The acquiring firm, Olin, is a diversified Virginia corporation that manufactures and markets chemicals, including the swimming pool sanitizers calcium hypochlorite and isocyanurates. Olin has produced calcium hypochlorite ("cal hypo") since 1928 and currently operates the world's largest cal hypo plant at Charleston, Ten-

nessee. ID ¶¶ 9, 10.[1] In the 1977-1980 period, Olin constructed plants to produce cyanuric acid, an intermediate chemical in the production of isocyanurates ("isos"), and to produce two forms of isos, sodium dichloroisocyanurate ("dichlor") and trichloroisocyanuric acid ("trichlor"). Because of production problems, Olin closed its cyanuric acid plant in 1980 but continued to produce isos at the Lake Charles, Louisiana plant with cyanuric acid purchased from other manufacturers, including Nissan in Japan. ID ¶¶ 15, 492. In August 1984, Olin discontinued production of isos and began to market isos purchased from Monsanto under a toll production agreement. During the period when it purchased isos from Monsanto, Olin maintained its Lake Charles facility in readiness to resume production of isos. ID ¶¶ 16, 17.

FMC is a diversified manufacturer that, until this transaction, produced cyanuric acid and isos at its South Charleston, West Virginia plant. ID ¶ 39. FMC and Olin are not the only suppliers of these sanitizers in the United States. Monsanto produces cyanuric acid and isos in the United States, and dry sanitizers are imported, primarily from Japan. In addition to Olin, PPG Industries produces cal hypo. ID ¶¶ 153, 157-58, 335.

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[1] The following abbreviations are references to the record:

ID	– Initial Decision
RB	– Respondent's Appeal Brief
CB	– Complaint Counsel's Answering Brief
RRB	– Respondent's Reply Brief
CX	– Complaint Counsel's Exhibit
RX	– Respondent's Exhibit
Tr.	– Hearing Transcript.

B. *The Complaint and Initial Decision*

The complaint alleged that the acquisition, if consummated, would violate Section 7 of the Clayton Act, 15 U.S.C. § 18, and Section 5 of the FTC Act, 15 U.S.C. § 45, and that the purchase agreement violated Section 5 of the FTC Act, 15 U.S.C. § 45. The complaint alleged a substantial lessening of competition in two product markets: the "manufacture and sale of chlorinated isocyanurate and calcium hypochlorite dry swimming pool sanitizers" and the "manufacture and sale of chlorinated isocyanurate dry swimming pool sanitizers." The Administrative Law Judge ("ALJ") supervised extensive discovery and conducted an administrative hearing that accumulated a transcript of 9945 pages.

Administrative Law Judge Hyun found two relevant product markets in which to assess the competitive effects of the transaction. First, he concluded that dry swimming pool sanitizers, isocyanurates and cal hypo together, constitute a relevant market. ID ¶¶ 181-274. This conclusion was based on the characteristics and uses of the two chemicals, their price elasticity, trade recognition of the price relationship between the two chemicals, and the perceptions of buyers and sellers. *Id.* The ALJ concluded that liquid chlorine bleach for pool use was not part of the dry sanitizer market. ID ¶¶ 285-314.

Second, the ALJ decided that isocyanurates alone constitute a relevant product market. ID ¶ ¶ 275-84. Both parties agree.

The ALJ determined that the United States is the relevant geographic market. ID ¶¶ 321-54. Although both cal hypo and isos have been imported in significant quantities, the

ALJ concluded that the world is not the relevant market. Antidumping duty orders have been imposed with respect to both cal hypo and isos. ID ¶¶ 343-51. Capacity constraints and fluctuations in currency exchange rates also have contributed to the absence of a world market in these products. ID ¶¶ 632-48.

The ALJ found that the markets for dry pool sanitizers and isocyanurates are highly concentrated, that the merger would significantly increase that concentration and that the merger would eliminate substantial direct competition between the two firms. Judge Hyun found that imports of cal hypo or isos cannot be relied on to ensure competition in the United States markets. The ALJ also found that the acquisition would have anticompetitive effects in the market for isos and dry pool sanitizers. Although Olin had encountered difficulties in producing cyanuric acid and had entered a tolling agreement with Monsanto to process isos, the ALJ decided that it remained a viable isos producer. ID ¶¶ 650-709. Finally, the ALJ concluded that the evidence failed to establish an "exiting assets" defense even assuming that such a defense existed. ID ¶¶ 884-91.

Judge Hyun ordered Olin to divest the entire FMC swimming pool chemical business. ID ¶¶ 893. He rejected an argument that Olin should be permitted to retain the portion of the plant dedicated to the production of cyanuric acid.[2]

C. *Questions Presented on Appeal*

Olin appeals from the Administrative Law Judge's decision and order and raises seven issues. First, Olin argues that Judge Hyun incorrectly determined that isos and cal

2 We adopt the findings of fact in the Initial Decision to the extent that they are not inconsistent with this opinion.

hypo are part of the dry sanitizer product market, asserting that they are separate and distinct products. Alternatively, Olin asserts that if the market is broader than isos only, it should include liquid chlorine bleach for pool use. Second, Olin argues that at the time of the acquisition, it was not a viable producer of isos and could not become one absent the acquisition. Third, Olin argues that the ALJ overstated FMC's preacquisition market position. Fourth, Olin asserts that the conclusion that the acquisition substantially lessened competition is not supported by substantial evidence. Fifth, Olin argues that Judge Hyun erred in rejecting what it calls the "exiting assets" defense. Sixth, Olin claims that the ALJ erred in excluding certain testimony by Olin's economic expert witness. Seventh, Olin claims that the divestiture order is overly broad and is punitive because it requires the divestiture of the portion of the plant dedicated to producing cyanuric acid. We take up each of these issues below.

II. PRODUCT AND GEOGRAPHIC MARKETS

A. *Introduction*

Section 7 of the Clayton Act prohibits acquisitions "where in any line of commerce or in any activity affecting commerce in any section of the country, the effect of such acquisition may be substantially to lessen competition, or to tend to create a monopoly." 15 U.S.C. § 18. The first step in evaluating the competitive consequences of a merger is to ascertain the relevant product and geographic markets.[3]

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[3] *See, e.g.*, United States v. Marine Bancorporation, Inc., 418 U.S. 602, 618 (1974), *quoting* United States v. Du Pont & Co., 353 U.S. 586, 593 (1957).

At one time, merger analysis was based on rigid categorization of the relevant product or products and the pertinent geographic area, and all further consideration was based on transactions in that market. That approach tended to make market classifications all-or-nothing decisions and failed to account for the possibility of a continuum of competitive relationships among products and geographic areas.

We no longer use such rigid analysis but incorporate in the decision-making process the economic concept of cross-elasticity of demand, which measures the sensitivity of the demand for one product to a small change in the price of a second product. The Commission has observed that if cross-elasticities can be estimated with reasonable accuracy, the precise limits of the product market become less critical to the analysis. *Grand Union Co.*, 102 F.T.C. 812, 1040 (1983).

Citing *Grand Union*, Olin argues that affirmative proof of cross-elasticity of demand between isos and cal hypo is essential to define a product market that includes both chemicals. RB at 10. Olin argues that the ALJ's reasoning "insults the integrity of antitrust market analysis." RB at 10.[4] The identification of a product market, however, does not necessarily hinge on numerical calculation and proof of demand elasticity, the search for which is often fruitless because of the difficulty of measuring elasticities. The Supreme Court held that product markets are defined either by

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4 Olin argues that the record "unequivocally demonstrates" the absence of cross elasticity of demand between isos and cal hypo and relies on findings 192-194 in support of this claim. RB at 9. The evidence in the record, discussed below in section IB, includes statements by Olin itself acknowledging a price relationship between isos and cal hypo.

"the reasonable interchangeability of use or the cross-elasticity of demand . . ." *Brown Shoe Co. v. United States*, 370 U.S. 294, 325 (1962). In *Grand Union*, the Commission observed that a product market may be defined either in terms of the "cross-elasticity of demand" or the "reasonable interchangeability of use" between the product in question and potential substitutes. 102 F.T.C. at 1041-42. Indeed, the Commission had little information about elasticities in that case and applied its judgment on the basis of circumstantial factors. *Id.* at 1041. Of course, when reliable information concerning cross-elasticity of demand is available, it can be "most important" in product market definition. *Beatrice Foods Co.,* 101 F.T.C. 733, 801 (1983).

The Commission's approach permits and encourages, but does not require, direct numerical calculation and proof of cross-elasticity of demand and is consistent with the *Statement of Federal Trade Commission Concerning Horizontal Mergers* 12 (1982) (hereafter *"FTC Merger Statement"*) and with the Department of Justice's *Merger Guidelines*, 49 Fed. Reg. 26,824 (1984) (hereafter *"Justice Merger Guidelines"*). The *FTC Merger Statement* recognizes that direct cross-elasticity data are "generally unavailable" and that product markets may be defined by less direct evidence. The *Justice Merger Guidelines* indicate that if a small but significant and nontransitory price increase would cause so many buyers to shift from a product to an alternative product that the price increase would not be profitable, then the alternative is included in the product market. *Justice Merger Guidelines* at § 2.11. The *Justice Merger Guidelines* recognize that direct evidence of the consequences of an hypothesized future price increase will rarely be available and suggest that all relevant evidence be considered. *Id.* at § 2.12. Such evidence may include the perceptions

of buyers that the products are or are not substitutes, certain differences in price movements that are not explained by parallel trends, similarities or differences in use, design, physical composition and technical characteristics, and the perceptions of sellers that the products are substitutes. *Id.* We adhere to the approach of considering all reliable evidence relevant to the question whether consumers would turn to an alternative product if faced with a small but significant and nontransitory price increase.

B. *Product Markets*

Olin argues that the product market should be defined to include only isos and not cal hypo. Olin also argues that was not and would not become a viable isos producer, and consequently that the merger did not have a substantial adverse effect on competition.

Swimming pool sanitizers kill algae and bacteria. ID ¶ 65. Chlorine is the active sanitizing ingredient in isos, cal hypo and liquid bleach.[5] *Id.* Chemical treatment of swimming pools requires the addition of enough sanitizers to kill the algae and bacteria, and the addition, as appropriate, of chemicals to adjust the water's acidity or stabilize the chlorine in the pool water. ID ¶¶ 65-71. The major consumption of pool sanitizers is in maintaining the chlorine level in the pool water at 1 to 3 parts per million ("ppm"), as recommended by the Environmental Protection Agency. ID

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[5] Some other chemicals, such as lithium hypochlorite and bromine compounds, can be used as swimming pool sanitizers. ID ¶¶ 315-17. These chemicals are used in only insignificant quantities and do not act as a constraint on the pricing of the chlorine based chemicals, cal hypo and isos. *Id.* Even the respondent's expert dismissed the other chemicals as unimportant. Tr. 9136.

¶¶ 65-68. Intermittently, pools are "shocked" by the addition of enough chlorine to raise the level to 5-20 ppm. ID ¶ 67. Shock treatments eliminate any bacteria and algae that have escaped the routine maintenance treatments.

The two forms of isocyanurates for pool sanitation are dichlor and trichlor. ID ¶ 79. Dichlor has a chlorine content of 56-62%, and trichlor has a chlorine content of 90%. *Id.* Both are white crystalline solids and are used principally for pool sanitation. Dichlor dissolves rapidly, must be reapplied frequently, and is generally used in a granular form that is broadcast into the pool. ID ¶ 88. Trichlor dissolves more slowly and is often applied in the form of tablets or sticks that dissolve slowly. ID ¶ 86. Trichlor is quite acidic, but dichlor is not.

Calcium hypochlorite is also a white crystalline solid, has either 65% or 70% chlorine content and is also sold for pool sanitation. ID ¶¶ 92-93. Cal hypo is sold in both a granular form and a relatively new tablet form. ID ¶¶ 95, 181.

Similarities in the usage, physical composition, and technical characteristics of cal hypo and isos predominate over the minor differences between the two chemicals. The chlorine content of cal hypo is within the range of the chlorine content of the two forms of isos. Both cal hypo and isos are relatively stable chemicals, and a pool owner can purchase a year's supply of either in a single trip to the store. ID ¶ 186. Both cal hypo and isos are available in granular and stick or tablet form.

Isos appear to be somewhat more convenient to use than cal hypo. Cyanuric acid must occasionally be added to a pool treated with cal hypo to act as a stabilizer, and isos last longer than cal hypo. ID ¶ 270. The convenience of isos is

reflected in a price premium that isos maintain over cal hypo. ID ¶ 269. In light of the obvious similarities in form, usage and function, it seems apparent that cal hypo and isos are effective substitutes for one another.

Circumstantial evidence regarding the price relationship between isos and cal hypo supports the conclusion that the two products are in one product market. Strong evidence comes from the antidumping case in which Olin sought the imposition of duties on imports of cal hypo from Japan. Olin filed with the International Trade Commission ("ITC") a "Pre-Hearing Statement of Olin Corporation" on February 26, 1985, stating:

> We recognize that the domestic calcium hypochlorite industry faces increased competition from other pool chemical products, particularly from isocyanurates. Isocyanurates, however, traditionally have been priced substantially above calcium hypochlorite products. As the price of isocyanurates dropped in recent years, in large part due to Japanese dumping of that product, some consumers have chosen to purchase that product instead of either domestic or foreign-made calcium hypochlorite. CX 386I

In the same antidumping proceeding, Olin advised the ITC, "Olin recognizes that calcium hypochlorite must compete in the market with other chemical products, such as chlorinated isocyanurates. . . ." Conference Brief of Petitioner Olin Corporation, CX 380L. See also CX 383E. Olin's statement to the ITC persuasively illustrates its belief that as the price premium for isos narrowed, customers switched from cal hypo to isos.

Internal Olin planning documents confirm the price relationship between the two chemicals. Olin's "1983 Pool

Chemicals CEO Presentation" stated that "isocyanurates have sharply increased their share of [the chemical] 'used most often' since 1979, with calcium hypochlorite shouldering the loss." RX 52K. The Olin document also stated: "*A dramatic narrowing of the price differential between HTH* [an Olin brand of cal hypo] *and isocyanurates has taken place,* correlating very strongly with the change previously noted in the share relationship." RX 52N (emphasis in original). Other Olin documents record the narrowing of the price premium of isos over cal hypo and the simultaneous market share gains by isos. ID ¶¶ 198-200. Olin's representations to the International Trade Commission and the statements in its internal documents about the relationship between isos and cal hypo provide important evidence that the two dry sanitizers are in the same antitrust product market.[6] We do not rely on the International Trade Commission's determinations relating to the scope of a domestic industry, which may involve a legal standard different from those we apply in antitrust, but we do rely on Olin's factual statements indicating a significant degree of cross-elasticity between the products.

Olin is not alone in making this important observation. PPG, the second largest producer of cal hypo, similarly observed that "[c]onsumption of calcium hypochlorite as a swimming pool sanitizer can be affected by chlorinated isocyanurate consumption." CX 548D; *see* ID ¶¶ 212-13. Internal documents from FMC, a producer of isocyanurates,

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6 Olin did not suggest to the International Trade Commission that the price movements might be due to coincidental, but extrinsic, circumstances, such as changes in the costs of production of the two chemicals. Had Olin been aware of any such circumstances, presumably it would not have made the statements suggesting that the prices of isos and cal hypo were related.

recognize that there is an equilibrium price differential between isos and cal hypo at which sales of the two chemicals grow at the same rate. ID ¶¶ 214-17. Other producers and sellers have made similar observations. ID ¶¶ 218-23.[7]

Olin argues that the Administrative Law Judge found that sellers make their isos pricing decisions based "exclusively" on the price of competing brands of isos, not cal hypo. RB at 11. Olin overstates the point. The Judge found that due to the price disparity between the two chemicals, their pricing is set "primarily" on the bases of costs and competition with the same chemical. ID ¶ 192.[8] Sellers' initial and primary reference to the prices of the same chemical is not surprising where, as here, the greater convenience of isos over cal hypo supports a price premium. This seems particularly true if the two chemicals have reached an equilibrium price at which consumers are not switching, as a PPG witness believes has been the case since 1984. Tr. 5347-48. Evidence of what has happened during a period of

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7 Olin and other producers not only observed the price relationship between isos and cal hypo, but also have made business decisions on the basis of this competitive relationship. ID ¶¶ 205-10.

8 Some retailers and repackers testified that they looked only to the prices of the same chemical, Tr. 1698-99, but others recognized that competing chemicals played a secondary part in pricing a particular chemical. For example, Mr. Marshall, a repacker witness, testified that the "main consideration" in setting the price of a chemical is the competition for that specific product, but that the prices of the alternative (cal hypo or isos, as the case may be) "are certainly considered." Tr. 1200.

Mr. Hughes, a PPG executive, testified that in setting the price of cal hypo, PPG generally does not consider the price of isos. Tr. 9195. He also testified, however, that in 1984, PPG believed that isos dealers would not be able to pass on a price increase to their customers because of competition with cal hypo. Tr. 5262-64. He further stated that isos and cal hypo "do compete with each other in the marketplace." Tr. 5331.

equilibrium, in which convenience supports a stable customer base despite a price premium, does not serve as a predictor of what would happen if the price of isos or cal hypo rose above the competitive level.

The parties stipulated and, in a finding that we adopt, the administrative law judge concluded that isos is a relevant product market. That necessarily means that buyers, when faced with a small but significant and nontransitory price increase, would not shift to cal hypo in sufficient numbers to make the price increase unprofitable. Finding a product market in isos is consistent with the evidence that the demand for isos is inelastic, that distributors of isos believe the price of isos could go up more than five percent without consumers switching to cal hypo, and that sellers of isos make pricing decisions based on the price of competing brands of isos. ID ¶¶ 192-194.

We also agree with the administrative law judge that cal hypo and isos together constitute a relevant market of dry pool sanitizers. These two product market findings are consistent. Market definition depends on the relative prices of products and the impact that changes in those relative prices have on consumer behavior.[9]

Before the acquisition of FMC, Olin dominated the domestic production of cal hypo. Its share of United States production of cal hypo ranged between 79% and 89% in the

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9 Consumer preferences vary along a continuum and are not easily placed in all or nothing categories, but in this case, the evidence suggests enough of a consumer preference for isos that isos is a relevant product market. The evidence also suggests that the consumer preference for cal hypo was weak enough that as the price of cal hypo approached the price of isos, a small additional price increase would cause large numbers of consumers to shift from cal hypo to isos.

period from 1980 through 1984. ID ¶¶ 388, 465. The other domestic producer, PPG, was a price follower. ID ¶ 392. Some product was imported from Japan, but the antidumping action, filed in April 1984, caused a reduction in the quantity of cal hypo supplied by the Japanese firms. ID ¶¶ 626-28. Although the market structure suggests the possibility of market power in cal hypo, the price of cal hypo remained below the price of isos. During the period from 1977 to 1983, the price premium of isos over cal hypo had decreased because the price of cal hypo increased at a faster rate than that of isos. ID ¶¶ 197-98. After the price spread between cal hypo and isos narrowed, Olin could not profitably impose a small but significant and nontransitory increase in the price of cal hypo because of the danger that consumers would then switch to isos.[10] ID ¶¶ 209-10.

Nevertheless, a firm with market power over both cal hypo and isos could profitably impose a small but significant and nontransitory increase in the price of both chemicals. As discussed above, consumers, when faced with similar price increases in both products, would not shift to other products, such as pool bleach, in sufficient numbers to make the price increase unprofitable. Therefore, one relevant market in which to evaluate the competitive effect of the acquisition of FMC includes both cal hypo and isos.

The relevant market in which to evaluate the competitive position of Olin, as a producer of cal hypo, is the dry

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10 Isos had advantages over cal hypo for consumers. If the prices of isos and cal hypo were the same, most, if not all, consumers would choose to use isos. To maintain its cal hypo business, Olin was constrained to keep the price below that of isos.

sanitizer market including both cal hypo and isos. The relevant market in which to evaluate the competitive position of Olin as a producer of isos includes both the market for isos and the larger market for dry pool sanitizers. It is appropriate then to consider the impact of the merger on competition both in the market for isos and in the combined market for isos and cal hypo.

C. *Exclusion of Expert Testimony*

The respondent's argument that isos and cal hypo are not in the same product market rests heavily on testimony proffered by its economic expert that the ALJ excluded from evidence. Olin argues that the testimony should have been admitted, and that, if admitted, the testimony would establish that cal hypo prices do not influence isos prices. Judge Hyun excluded the testimony on the ground that Olin failed to provide complaint counsel with timely notice and an adequate opportunity to prepare for cross-examination. ID ¶ 204; Tr. 9078-84. The Judge also said that the basis for the expert's opinion was not, as provided in Rule 703 of the Federal Rules of Evidence, "of a type reasonably relied upon by experts in the particular field." ID ¶ 204.

First, we consider whether the Administrative Law Judge properly excluded the testimony on the ground that the respondent failed to give adequate notice to complaint counsel. Olin notified complaint counsel on April 16, 1987, that it proposed to use six documents (RX 386-91) during direct examination of its expert, who testified five days later. On April 17th, complaint counsel moved to preclude the use of

these exhibits at trial.[11] Complaint counsel objected that this last minute notification violated paragraph 2(c) of the Prehearing Order of September 17, 1985, which provided that the proponent of tables, graphs or charts summarizing statistical data "shall serve copies of them sufficiently in advance of the commencement of trial and shall at the same time advise opposing counsel where the underlying data may be examined. . . ." At the trial on April 21, 1987, the respondent's expert proffered testimony about his inferences from and analyses of the six charts and graphs.

Section 3.38(b) of the Commission's Rules provides that if a party fails to comply with a prehearing order of an Administrative Law Judge requiring advance notice of exhibits, the ALJ or the Commission may, among other things, "[r]ule that the party may not introduce into evidence . . . the documents" in question. 16 C.F.R. § 3.38(b)(3). We believe that Judge Hyun did not abuse his discretion in excluding the testimony under the circumstances here. After lengthy discovery and well into the presentation of the case in defense, the respondent turned the graphs over only days before the expert was to take the

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11 Complaint Counsel's Motion to Preclude, Dkt. No. 9196 at 2824 (April 17, 1987). Respondent points out that it sent complaint counsel a copy of statistical material on March 26, 1987, and a copy of six documents later offered as exhibits on April 3, 1987. *Id.* at App. A. Respondent's "Memorandum in Support of Motion for Reconsideration of Order Excluding Certain Testimony of Respondent's Expert Witness," May 15, 1987. The statistical material was disclosed one day after the conclusion of the expert's second deposition, and the disclosure of the graphs on April 3rd neither indicated that they would be used at trial for any purpose nor that they were based on the March 26 statistical material.

stand.[12] As the official responsible for supervising discovery, Judge Hyun was particularly well situated to discern whether Olin's timing was consistent with his order. We affirm the decision of the ALJ that Olin failed to comply with the prehearing order.

Our inability to test the reliability of the data that Olin's economic expert intended to use in reaching his conclusions underscores the importance of complying with pretrial orders to provide an opportunity for adequate cross examination.[13] The Olin economic expert relied on a statistical compilation prepared by an Olin employee at the expert's request specifically for the purposes of the trial. Olin makes no argument that this compilation was an ordinary business document under an exception to the hearsay rule, and, on the basis of the record, we have no way to evaluate the reliability of the compilation.

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12 The respondent argued that it could not have turned the material over more quickly because its expert merely extended some statistical data introduced by complaint counsel's expert in February 1987. Tr. 9803. In fact, however, respondent's expert caused an Olin employee to prepare, for this litigation, a similar set of data covering a longer time period. Tr. 9160-65. Olin made no effort to introduce the underlying statistical data in evidence.

13 We also agree with the Judge, in reference to Rule 703 of the Federal Rules of Evidence, that the data were not "of a type reasonably relied upon by experts in the particular field." The proposed testimony highlights a dilemma presented by expert testimony grounded on "facts" that are not introduced in evidence. *See* Soden v. Freightliner Corp., 714 F.2d 498, 502-505 (5th Cir. 1983) (excluding expert testimony based on statistics prepared in anticipation of litigation).

The statistics on which the excluded testimony of Olin's expert relied allegedly showed that "when dumping margins were imposed on isos in 1984, isos prices rose substantially, while cal hypo prices and volumes remained stable." RB at 9 n.5. The respondent's proposed findings rely on the excluded testimony for these factual conclusions. RPF 700-04; RB at 9 n.5. These allegations were to have provided a factual basis for the proffered opinion of Olin's expert that the products were in separate markets.

The danger of reliance on "facts" prepared by one of the respondent's employees for use at trial is highlighted by other record evidence contradicting these factual hypotheses on which Olin's expert would have based his opinion. The confidential response to the ITC questionnaire that Olin submitted to the International Trade Commission on February 19, 1985, which was introduced in evidence as CX 384, refutes Olin's argument that when the price of isos rose in 1984, the price of cal hypos remained stable. That questionnaire response contained Olin pricing data indicating that in 1984, the prices for cal hypo products rose in many cases. CX 384V, X, Z28, Z29. Indeed, the report of the staff of the International Trade Commission in connection with its antidumping investigation indicated that cal hypo prices rose significantly in 1984. CX 176Z15, Z17. The offer of proof for the excluded testimony showed no effort to reconcile the inconsistency between the information on which the expert relied and these other facts in the record. We conclude that complaint counsel would have been prejudiced by allowing such testimony following Olin's failure to comply with the pretrial order.

Finally, we note that the expert testimony, if admitted in evidence and found reliable, would not alter our conclusion

that dry sanitizers constitute a relevant product market that includes both isos and cal hypo. The point of the expert economic testimony proffered by Olin is that when the price of isos rose following the 1984 antidumping action in isos, the expert could find little or no impact on the price and quantity of cal hypo sold. Assuming this as a fact does not impeach the dry pool sanitizer market definition we have adopted.

The parties stipulated that isos was a relevant product market. By definition that means that if the price of isos rose a small but significant and nontransitory amount, consumers would not switch to the less convenient, albeit lower priced, cal hypo in sufficient numbers to defeat the price increase. In deciding whether cal hypo and isos are in the same dry pool sanitizer market, however, the relevant question is whether if the price of cal hypo rose, thereby narrowing or eliminating the price gap between cal hypo and isos, consumers would switch to isos. Olin's planning documents recognize that such consumer switching would take place.[14] Olin's economic expert did not propose to address that issue.

D. *Liquid Chlorine Bleach*

Olin argues in the alternative that if the relevant market is not limited to isos, it is an all sanitizer market, including liquid chlorine pool bleach (sodium hypochlorite). Liquid pool bleach has a chlorine content of 10-12%, which is about twice the chlorine content of household laundry bleach. ID ¶¶ 112, 117. Pool bleach cannot be produced on

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14 One would expect that if the price of isos rose, Olin would take advantage of that price increase to later increase the price of cal hypo. The evidence suggests that Olin priced cal hypo at a level below that of isos but not high enough to induce consumers to switch to isos. ID ¶ 209-10.

the equipment used to produce household bleach. ID ¶ 117. Because of its low value and relatively high transportation cost, pool bleach is generally sold within 200-300 miles of the bleach plant. ID ¶¶ 119, 285. Most pool bleach is consumed in discrete geographic regions, notably southern California, parts of Florida, and the Detroit and Chicago areas. ID ¶¶ 119, 285.

The physical and technical characteristics of liquid pool bleach differ from those of the dry pool sanitizers. Compared with dry sanitizers, liquid pool bleach has a low concentration of chlorine. Although a consumer can purchase a season's worth of dry sanitizer at one time, he or she must repurchase liquid bleach frequently because it has a short shelf life. ID ¶ 296. It is generally sold in flats of four one-gallon bottles or in larger carboys (two and one-half or five gallon containers). ID ¶ 118. Additionally, spills or splashes of bleach can damage clothing or the interiors of vehicles. Consumers regard liquid bleach as an inconvenient product, compared with isos or cal hypo, and convenience is an important factor in the consumer's choice of a pool sanitizer. ID ¶¶ 299-302. Pool bleach is less expensive than either isos or cal hypo. ID ¶ 115.

Pool service companies, rather than homeowners, are the primary consumers of pool bleach. The use of pool cleaning services is most prevalent in southern California, Florida and the Detroit area, which areas coincide with the regions of heavy pool bleach consumption. ID ¶¶ 146-47. An Olin marketing document estimated that 73 percent of all bleach in southern California was consumed by pool service operators. ID ¶ 149. We conclude that if prices of cal hypo

and isos rose, pool owners would not sign up for pool services using bleach in sufficient numbers to defeat the price rise.

Although the record does not contain detailed data on the cross-elasticity between isos or cal hypo and liquid pool bleach, circumstantial evidence indicates a low degree of substitution between dry and liquid sanitizers. Over the years, bleach's share of sales has remained quite stable, even during periods of intense price or convenience competition between cal hypo and isos, and when those products' shares of sales changed significantly. ID ¶ 310. We conclude that liquid pool bleach is not in the relevant market composed of cal hypo and isos.

E. *Geographic Market*

We agree with ALJ Hyun that the relevant geographic market is the United States. ID ¶ 354. Olin does not challenge the geographic market definition but does argue that after the acquisition, imports will ensure competition in the United States. RB at 41-44. That issue is discussed below in Section IV.

III. OLIN'S AND FMC'S PREACQUISITION MARKET POSITION

Olin claims that it was not a viable producer of isos before the FMC acquisition. Olin asserts that the ALJ incorrectly included its trichlor (isos) production capacity in assessing its preacquisition market position, arguing that it was never a viable isos producer and could not have become one. The relevant market is dry sanitizers, rather than just isos, and Olin was the number one producer in capacity and output in the market for dry sanitizers solely on the basis of its cal hypo production. ID ¶ 569. Nonetheless, because

Olin's lead in dry sanitizers over the second largest domestic producer would be diminished if its isos capacity and output were excluded from the analysis of the market shares, the viability of Olin's isos business is significant in assessing its preacquisition market position.

Olin argues that under *United States v. General Dynamics Corp.*, 415 U.S. 486, 498 (1974), its own and FMC's preacquisition market shares are not indicative of their market power. RB at 17. Consistent with the *FTC Merger Statement*, § III, and the *Justice Merger Guidelines*, Judge Hyun did not treat the market shares as conclusive indicators of market strength and position. ID ¶¶ 649, 651. Indeed, he reviewed Olin's claims of diminished competitive vitality at considerable length. ID ¶¶ 650-709. Olin's quarrel with the Initial Decision apparently is not over the principle that the Commission should look beyond the bare market share statistics, but rather is with the Judge's assessment of its own and FMC's competitive significance.

A. *Olin's Preacquisition Position in Isocyanurates*

Olin originally planned its Lake Charles, Louisiana plant as a four-part facility, including a cyanuric acid plant, a trichlor plant, a dichlor plant, and a packaging plant. ID ¶ 358. Olin planned that trichlor would be the primary end product, and the dichlor plant was small and not critical to the plant's success. ID ¶¶ 359-60. Olin top management approved the construction of the four-part facility in 1977. RPF 154. After encountering significant technical difficulties with the cyanuric acid plant, Olin top management decided to shut down the cyanuric acid facility in October 1980. RPF 156-63. In 1981, Olin wrote off the cyanuric acid facility against earnings. RPF 165.

Olin also experienced some difficulties with the dichlor plant during its start up phase, but the plant became operable and, in the view of the Chief Executive Officer of Olin, achieved its design capabilities. ID ¶ 369. The dichlor plant was shut down in 1982 after Olin concluded an agreement to swap its trichlor for FMC dichlor. ID ¶ 370. The Lake Charles packaging plant for isos was a failure. Although Olin operated the plant for several years after its construction in 1979, its automated systems were plagued with problems, and Olin shut down the facility permanently in 1982. ID ¶ 368; RPF at 175-77.

Olin continued to operate its trichlor production facility, despite the failure of its cyanuric acid plant. Beginning in 1980, it purchased cyanuric acid from Nissan, a Japanese producer of both cyanuric acid and isos. Olin purchased increasingly large quantities of cyanuric acid from Nissan in each year through 1984. ID ¶ 661. During the same 1980 to 1984 time period, Nissan substantially increased its capacity to produce cyanuric acid. ID ¶ 662. Olin's internal documents indicate that the company believed that Nissan had sufficient excess cyanuric acid capacity to satisfy Olin's entire demand for cyanuric acid. ID ¶ 665. In 1982 and 1983, Olin did not purchase as much cyanuric acid from Nissan as it had agreed to purchase in its annual supply contracts. ID ¶¶ 668-669. In 1984, Nissan had available enough cyanuric acid to supply Olin's requirements, and an Olin executive believed that it would be able to satisfy Olin's requirements for the next two to three years. ID ¶ 672. During the period 1982 to 1984, Nissan unfailingly fulfilled its supply and delivery commitments to Olin. ID ¶ 673.

In 1982, Olin representatives were informed that Nissan wanted to continue to supply its cyanuric acid requirements

"forever." ID ¶ 677. Nissan indicated that it could undertake two debottlenecking steps that would significantly expand its capacity and offered to make the expansions to accommodate Olin's needs. ID ¶¶ 679-80.

In 1984, however, Olin entered an agreement with Monsanto, which was to become effective July 1, 1984, and continue for at least two and one-half years and thereafter to terminate only on one year's written notice. ID ¶¶ 763, 765. Olin agreed to supply caustic and chlorine to Monsanto and receive isos in return. *Id.* Olin also had the right under the contract to supply cyanuric acid but never exercised the right as it had discontinued production of cyanuric acid. ID ¶¶ 765, 767. After concluding this agreement with Monsanto, Olin "waterbatched" its trichlor plant. Waterbatching involves maintenance of the plant in a state of greater readiness to resume production than mothballing the plant. Id ¶ 17. When Olin advised Nissan of its agreement with Monsanto, Nissan considered the cyanuric acid supply agreement to be terminated.

By 1984, Olin had attained a significant share of the United States of isocyanurates market and was by far the leading producer of dry sanitizers. ID ¶ 583. Despite its success in penetrating the market for isocyanurates, Olin argues that before the acquisition of FMC's assets, it was not a viable producer of isocyanurates. In support of this view, Olin argues that its dependence on Nissan as a supplier of cyanuric acid rendered it vulnerable. Its second argument is that it was at a significant production cost disadvantage as a result of being forced to pay high prices for cyanuric acid. Third, Olin argues that its financial losses in this period demonstrate its nonviability.

Nothing in the record suggests that Olin's leading market share overstates its competitive vigor. Olin asserts that the ALJ overlooked the fact that Nissan was a competitor in the sale of isos and, according to Olin, had the power to exclude Olin from the isos market. RB at 19-20. Citing *Otter Tail Power Co. v. United States*, 410 U.S. 366, 370-71, 377 (1973), Olin argues that Nissan's "stranglehold" over it gave the Japanese firm the ability to control Olin's prices and output. *Otter Tail* by no means establishes a principle that reliance on a competitor as a supplier disables a firm as a matter of law. In *Otter Tail*, the evidence showed that the power company not only refused to deal with municipal power systems, but also refused to carry power produced by others to them and litigated to block alternative means of delivery of power to fledgling competitors. Entirely unlike the situation in *Otter Tail*, the evidence here indicates that Nissan was willing and able to sell cyanuric acid to Olin, and that Nissan did nothing to block Olin from obtaining cyanuric acid from another source. As indicated above, Nissan expanded its capacity to accommodate Olin's wants, and the Japanese company always faithfully delivered on its contractual commitments to Olin. Olin depicts its vulnerability as a purchaser, while ignoring Nissan's mutual dependence on Olin as the purchaser of a large portion of its cyanuric output. ID ¶¶ 661-62.

If dependence on a competitor made Olin's management concerned about the long-term security of the business, the firm had alternative means, short of acquisition of a major competitor, to increase the stability of the situation. It could, for example, have sought to negotiate a long-term supply contract. It could and in fact did continue to pursue development of a viable technology for the production of its

own cyanuric acid. It could and did seek alternative suppliers.

As Judge Hyun found, during the period preceding the decision to enter the Monsanto tolling agreement, Olin made a serious effort to develop a workable cyanuric acid production technology. ID ¶¶ 547-59. The Monsanto tolling agreement did not end these development efforts; on the contrary, they continue through the period after the agreement was signed before the FMC acquisition. *Id.* In its brief, Olin disparages this effort to develop an alternative cyanuric acid technology as an idea that "makes no economic sense," because the company had already been unsuccessful. RB at 25. Olin argues that the ALJ's findings rest on documents prepared by employees, and that Olin officials testified that the Board would never have approved further spending on cyanuric acid. RB at 26. It is impossible to know with certainty what Olin's Board of Directors would have done if presented with a viable plan to produce cyanuric acid. We cannot assume, however, that the Board would have turned down any plan, no matter how sound.

Olin's second argument is that it suffered a severe cyanuric acid cost disadvantage vis-a-vis Monsanto and Nissan, and that this in turn put Olin at a cost disadvantage in the production of isocyanurates. RB at 20-23. Although a manufacturing cost disadvantage may weaken a competitor (particularly absent other strengths), Olin's claim that its significant and growing market share masked weakness is unpersuasive. Olin compares the price it paid to Nissan for cyanuric acid with figures purporting to be Monsanto's and Nissan's cost of cyanuric acid production. RB at 21. These

comparisons fail to establish Olin as a weakened competitor.[15] FMC's standard cost of making cyanuric acid was higher than the price Olin had agreed to pay to Nissan. ID ¶¶ 689-90. If the cyanuric acid cost disadvantage was the driving force behind Olin's business strategy, it hardly seems reasonable to purchase a plant whose cost of production was higher than Nissan's selling price.

Finally, Olin argues that its financial losses since its entry into the production and sale of isos demonstrate its lack of viability. It seems clear that after Olin entered the isocyanurates business in 1980, it incurred substantial financial losses on those operations. RB at 20. The cause of those losses, however, is not easy to pin down. Olin would now have us find that the losses demonstrate its lack of viability as an independent producer. Other explanations seem more credible. Olin itself offered another explanation to the International Trade Commission in the antidumping proceeding involving cyanuric acid and its derivatives. Although Olin now suggests that its July 1984 decision to sign the tolling agreement with Monsanto was due to its lack of viability as a domestic producer, a contemporaneous brief to the ITC contains no hint whatsoever that Olin was not a

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15 Olin's claimed cyanuric acid and isos cost disadvantage is not based on reliable data. The comparisons of Monsanto's cost with Nissan's price is not reliable because the Monsanto cyanuric acid was at a less advanced stage of processing than the Nissan product and did not include all costs, such as overhead. Tr. at 3950, 4060-63. Olin's claim about Nissan's cost rests on a document not explained by any Nissan or other knowledgeable witness. RX 263A. Based on other information, Olin managers made a considerably different estimate of Nissan's costs. ID at 704. Although we are not in a position to make definitive findings on Nissan's production costs, Olin has not pointed to solid evidence to show that it is at a cost disadvantage that makes its market share overstate its actual market power.

viable isos producer.[16] On the contrary, Olin's brief affirmatively points to low prices by Japanese producers as the source of the problems of the domestic industry. CX 376G-M.

Olin has not made a persuasive showing that the losses demonstrate its lack of viability because there are other reasons that would appear to account for the losses. In the early 1980's, Olin was a new entrant in the production and sale of isos. It incurred costs to promote its new brand name for this pool chemical. ID ¶ 374. At the same time, it experienced difficulties with the start up of its acid plant, the dichlor plant and the packaging plant. RPF 163, 173. Strategic planning documents prepared by Olin employees in the period from 1982-1984 blame the company's problems on industry overcapacity. CX 259Q, CX 260G, CX 261A, CX 266B. Those strategic planning documents do not reflect a decision or consensus that the firm must exit the isos industry due to a lack of viability.

B. *FMC's Preacquisition Market Position*

Olin also argues that FMC's market share at the time of the acquisition overstated its effectiveness as a competitor. *United States v. General Dynamics Corp.*, 415 U.S. 486, 489 (1974). FMC has been a producer of isos since 1963, and its South Charleston plan was the second largest such facility in the world. ID ¶ 399. In 1978, it began the distribution of branded isos and thereafter undertook a major promotional effort to establish the "SUN" brand of pool sanitizers. ID ¶ 402. FMC earned a reputation for aggressive pricing. ID ¶¶ 403-06.

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16 On March 9, 1984, Olin filed a "Pre-Hearing Brief of Olin Corporation" with the ITC in connection with the antidumping proceeding. CX 376.

In 1979, FMC undertook a review of the profitability of all its business operations with a view toward divesting any units with profitability below the corporation's internal standards. ID ¶¶ 407-10. The CDB unit, which included isocyanurates, failed to meet the corporate "hurdle rates" for continuation as part of FMC. ID ¶ 412.[17] In 1980, FMC's corporate planning department predicted that improvement in the isos business was unlikely, and the company adopted an operating mode of "maintain-and-selectively-invest." ID ¶ 416.

During the 1982 corporate planning process, the management of the CDB unit recommended that FMC exit the business, and other units supported this recommendation. ID ¶¶ 417-18. FMC shifted the CDB unit to the "run/sell" mode of operation, under which it was contemplated that FMC would continue to operate the business until such time as an acceptable purchaser could be identified. ID ¶ 420.[18] In 1984, a strategic plan update was prepared, recommending a continuation of operation in the run/sell mode and rejecting the option of a shutdown, which top management affirmed in the fall of 1984. ID ¶ 423; Tr. 3863.

The value of the CDB business unit as an operating entity actually improved during the period preceding this acquisition. At the time of the 1982 strategic review, the net present value of continued operations was close to the liquidation value, but in the 1984 review, the net present value

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17 Because of FMC's internal accounting procedures, it is difficult to evaluate the stand-alone profitability of the pool chemicals business. ID ¶ 413.

18 This decision did not mean that the company discontinued all investment. The company continued to invest in debottlenecking the plant's isos capacity. ID ¶ 420.

of continued operations was more than double the liquidation value. ID ¶¶ 427-28. At the time of the sale, the CDB unit was profitable, and profits were expected to continue. ID ¶¶ 429-30. During the time from 1980 to 1984 when FMC was not fully committed to the isos business, FMC believed its market share increased significantly. ID ¶¶ 432-33.[19]

Olin argues that the ALJ failed to "appreciate" the likelihood that FMC's assets would have exited the industry absent this acquisition. RB at 32. Olin, however, has made no showing that the FMC swimming pool chemicals business was not viable or would have exited the market. At most, the evidence indicates that this business unit did not meet FMC's internal, corporate profit objectives, and the company planned to divest the assets.[20] While such evidence may suggest that FMC would exit the market, it does not suggest that the assets would exit.

IV. EFFECT ON COMPETITION

Section 7 of the Clayton Act forecloses incipient competitive problems by prohibiting mergers the effect of which "may be substantially to lessen competition, or to tend to create a monopoly." 15 U.S.C. § 18 (1982); *United States v. Philadelphia National Bank*, 374 U.S. 321, 362

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19 After 1982, FMC reduced its promotional efforts and dealer support. ID ¶ 434. In December 1984, FMC wrote off the CDB assets and took a charge against corporate earnings. ID ¶ 435.

20 An August 1984 FMC planning document indicates that the unit's profitability had improved, that the present value of continued operations was considerably greater than the liquidation value, and that there was an opportunity to sell the business. CX 29.

(1963).[21] Indeed, the statute's prospective focus is fundamental to *United States v. General Dynamics Corp.*, 415 U.S. 486, 503, 505 (1974), in which the Supreme Court directed attention to the likely impact of the merger on future competition in the relevant market.

A. *The Dry Sanitizer and Isocyanurates Markets Are Highly Concentrated*

The fewer the competitors in a market, the easier it becomes for the firms to coordinate price and output decisions. *United States v. Aluminum Co. of America*, 377 U.S. 271, 280-81 (1964); *Brown Shoe Co. v. United States*, 370 U.S. 294, 343-45 (1962); *Hospital Corporation of America v. FTC*, 807 F.2d 1381, 1387 (7th Cir. 1986) (Posner, J.); *see Justice Merger Guidelines* § 3.1 (1984). The dry pool sanitizer market, including both cal hypo and isocyanurates, is highly concentrated by virtually any measure employed in antitrust analysis. On the basis of United States production capacity in 1985, the post-acquisition Herfindahl-Hirschman Index ("HHI") is 3852, with an increase in the HHI of over 1065 points. ID ¶ 569. On the basis of United States production in 1984, the post-acquisition HHI is 4122, with an increase of 1186. ID ¶ 569. Olin's share of production capacity for dry pool sanitizers is 57 percent. *Id.* The post-merger four-firm concentration ratio approaches 95 percent. ID ¶ 571.

The concentration in the dry sanitizer market and increase in concentration caused by this merger are far greater than the levels of concentration that typically signal an excessive danger of anticompetitive effect. Section 3.11 of the *Justice*

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21 *See* United States v. Penn-Olin Chemical Co., 378 U.S. 158, 170-71 (1964) (comparing standards).

Merger Guidelines states: "if the increase in the HHI exceeds 100 and the post-merger HHI substantially exceeds 1800, only in extraordinary cases will such factors [the factors discussed in sections 3.2 to 3.5] establish that the merger is not likely to lessen competition." This merger will raise the level of concentration to a level more than double the 1800-point threshold at which the Department is likely to challenge mergers.

Olin's acquisition of FMC's pool chemical business produced a degree of concentration in the dry sanitizer market extremely high in comparison to recent Commission merger precedent. In *B.F. Goodrich Co.*, 110 F.T.C. 207, 313 (1988), the Commission found a violation of Section 7 in the vinyl chloride monomer market in which the acquisition in question increased the HHI based on practical production capacity by 253 points to 1552. In *Hospital Corporation of America*, 106 F.T.C. 361, 487-88 (1985), *aff'd*, 807 F.2d 1381 (77th Cir. 1986), the Commission considered a market with a post-acquisition HHI of at least 2416, which the Commission found "to be of serious competitive concern . . . ." The Commission found liability and ordered divestiture. In *Weyerhaeuser Co.*, 106 F.T.C. 172, 280 (1985), although the Commission found no violation of Section 7 where the HHI increased by 211 points to 1166, the decision was based on consideration of industry characteristics other than concentration.

We find that the level of concentration in the dry sanitizer industry and the increase in concentration cause by this acquisition raise serious competitive concerns. Nonetheless, the seriousness of these concerns does not foreclose examination of particular characteristics of competition in

the market to determine if extraordinary circumstances rebut the signal of competitive hazard given by the industry structure. The level of concentration in the isocyanurates-only market proposed by Olin is also very high. in the isos-only market, based on 1985 United States capacity data, the post-acquisition HHI would be 3826 with an increase in the HHI of 1114. On the basis of 1984 United States production data for the isos-only market, the post-acquisition HHI is 3467 and the increase in the HHI is 702. ID ¶ 576. These concentration levels are similar to the concentration levels in the dry pool sanitizer market and raise the same competitive concerns.

B. *Entry Is Not Easy*

The ease or difficulty of entry is "perhaps the most important qualitative factor" in assessing whether anti-competitive conduct is likely. *FTC Merger Statement* at 5 (1982). If entry is easy, then price-elevating collusion may be defeated by an outsider. *See, e.g., United States v. Waste Management Inc.*, 743 F.2d 976, 982-84 (2d Cir. 1984); *Echlin Manufacturing Co.*, 105 F.T.C. 410 (1985). Since absolute barriers to entry, such as control of all reserves of some necessary ingredient, rarely exist, it is useful to assess the magnitude of barriers or impediments to entry in terms of the amount of time required for a motivated outsider to effect entry. The *Justice Merger Guidelines*, Section 3.3, employ a two-year threshold in considering the likelihood of entry. The longer the time required for successful entry, the greater the likelihood of a challenge to a horizontal merger.

Olin's not inconsiderable difficulty in establishing itself as an integrated producer of isocyanurates suggests that entry in this industry is problematic. Olin's Chairman and

Chief Executive Office estimated that it would take ten years to effect new entry in the production of trichlor. ID ¶ 714. Others estimated that even giant chemical companies would take from three to five years to enter. ID ¶ 715. The development of technology and the acquisition of manufacturing know-how and experience to produce this chemical cause entry to be a lengthy process. ID ¶ 716.

Similar problems confront a firm considering entry in the production of calcium hypochlorite. Olin employees estimated that a *de novo* entrant would need five to eight years to develop the manufacturing technology necessary to produce the chemical. ID ¶¶ 728-29. These estimates are confirmed by the experience of PPG, which took six years to develop the technology, build a plant at Natrium, West Virginia, and achieve initial production. ID ¶ 732. Indeed, since PPG had a long history of experience in producing cal hypo before starting on the Natrium plant, it seems likely that a novice producer might require more than six years to enter effectively. ID ¶ 733.

Overall, the evidence indicates that entry by new competitors is unlikely to defeat anticompetitive behavior in the dry sanitizer market for many years. This long lead time merely increases concern about the hazard of anticompetitive conduct.

C. *Industry Propensity For Anticompetitive Conduct*

In 1984, Olin, which was the third largest domestic producer of isocyanurates, entered an agreement with Monsanto, the leading producer of isos, to purchase sufficient isos to cover Olin's anticipated needs ("Agreement"). CX 469. The Agreement was effective July 1, 1984, and ran at least two and one-half years until December 31, 1986, after which date, it was terminable on twelve

months written notice. CX 469B. For the last six months of 1984, the Agreement provided for sales of one million pounds per month; thereafter, it provided for sales of 2.5 to 4 million pounds per quarter. CX 469B-C.

Under the Agreement, Olin provided chlorine and caustic, and had the option to provide cyanuric acid. The Agreement set forth formulas for determining the fee for conversion of the chlorine and caustic to isos. CX 469D. The Agreement also contained liquidated damages provisions for shortfalls in performance. CX 469Q-R.[22]

The evidence strongly indicates that Olin saw the Agreement not as a way to reduce the costs of operating its plant but as a way to reduce output and increase prices. The record indicates that the plan was under consideration for some time before it was implemented. In January 1983, Mr. Swartley, who was President of Olin's Consumer Products Group, prepared a document discussing the option of suspending production and marketing purchased isos. ID ¶¶ 28, 768-69, CX 327. The memorandum states: "*Removing production capacity from the market may improve profit potential*. With less obvious volume pressure, pricing should be improving over time." CX 327 (emphasis in original). Mr. Swartley's view was that an agreement such as the one with Monsanto would reduce the surplus of trichlor on the market and would have a positive impact on pricing. Tr. 7431.

Other Olin documents indicate that the company's management was well aware of the price effect of removing its output from the market. ID ¶¶ 768-81. The "1984 Pace

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22 After the Agreement was signed, Olin "waterbatched" its isocyanurates plant at Lake Charles. See discussion *supra* at 16.

Strategic Plan," dated April 23, 1984, compares the alternatives of continued isos production with the Monsanto tolling agreement alternative. For the "business as usual" option, the general projection is "continued depressed industry prices," but for the Monsanto tolling alternative, it projects "recovery of industry prices." CX 261C.[23] The Plan projects "netbacks" under the two alternatives. Under the Monsanto tolling option, the projected prices would be 24 to 30 cents per pound higher than under a scenario with continued Olin production of isos. *Compare* CX 261E *with* CX 261G. A financial analysis of the proposed Monsanto Agreement, prepared for the Chief Executive Officer of Olin on May 7, 1984, predicts a lower sales volume but states: "Accelerated market price increases associated with a more balance supply/demand position than nominal increases in the 'Business As Usual' [operating mode]." CX 659A.[24]

The Monsanto Agreement was apparently not signed to reduce the manufacturing costs of isos to Olin, as Olin now argues. In December 1984, a "Pace Business Review" was prepared for presentation to Olin's Chief Executive Officer, the Finance Committee, and the Board of Directors. CX 263. This document indicates that the "total manufacturing cost" of isos by Olin using cyanuric acid purchased from Nissan was less expensive than isos purchased under the

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23 An Olin corporate vice president initiated the contacts with Monsanto that led to the Agreement by telephoning a high level Monsanto executive in January 1984. ID ¶ 764.

24 The document also projected some savings on fixed costs. *Id.*

Monsanto Agreement. CX 263V; Tr. 8181-85.[25] It seems reasonable to conclude that price increases, brought about by decreased supply, were in fact the reason for the Monsanto Agreement.

After Olin waterbatched its isos plant, it appears that shortages of isos did occur. ID ¶ 780. Indeed, under the tolling contract, Monsanto paid significant penalties to Olin because of a shortfall in deliveries of isos. RPF 355.

Olin argues that the Monsanto Agreement gave Monsanto the funds to increase its isos production capacity and that the long-term effect of these Monsanto capacity expansions was procompetitive. RB at 37-38. A Monsanto witness testified that Monsanto accomplished "debottlenecking" steps during the term of the Agreement. Tr. 4069-70. The witness declined to characterize the capital investment in Monsanto's Sauget trichlor plant as a capacity expansion. The witness stated: "Very little of what we have done has been done for expansion's sake. It has been done to achieve cost reduction." Tr. 4072.[26] Presumably Monsanto would have made such cost-justified investment regardless of the Monsanto-Olin Agreement, and the record does not support Olin's attempt to tie the Monsanto investment to the Agreement.

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25 The Olin financial analyst who prepared the comparison of the manufacturing costs testified at the hearing that the Olin manufacturing cost that was compared with the Monsanto cost at CX 263V was the Olin cost using purchased cyanuric acid. Tr. 8184-85.

26 The witness repeated that the Sauget investment should not be "termed as expansion" because it was driven by cost reduction motives. Tr. 4075.

D. *Import Competition*

Olin argues that imports limit the ability of domestic producers to collude successfully. Imports represented approximately nine percent of United States dry sanitizer capacity in 1985, ID ¶ 583, Table 3, and about twelve percent of United States dry sanitizer production in 1984. ID ¶ 583, Table 5. For isocyanurates alone, imports equalled nineteen percent of United States production in 1984. Virtually all of those imports were produced by two Japanese firms. ID ¶ 583, Table 2.

In evaluating the competitive significance of a foreign firm, we consider how much additional output would flow to the United States market in response to a hypothetical, small but significant and nontransitory price increase. *See* Introduction to the *Justice Merger Guidelines* at Section 3. Because it may be impossible accurately to measure the amount of additional foreign capacity available to increase supply to the United States in response to the price increase, it may be appropriate to employ foreign shipments in the calculations of market concentration. *Id.* That is what the Administrative Law Judge did in this case and, consistent with the *Guideline*'s prescription that qualitative evidence may be used to correct any distortion inherent in the quantitative data, ALJ Hyun reviewed the available evidence relating to the capabilities and problems of foreign suppliers in considerable detail.

Qualitative evidence concerning Japan, the major source of foreign dry sanitizer supply, underscores concern about the ability of these producers to defeat a price increase. First, the domestic producers of both isos and cal hypo have obtained antidumping relief against imports of these chemicals from Japan. In June 1983, Monsanto filed an anti-

dumping petition with respect to isos, and antidumping duties were imposed in April 1984. ID ¶ 590. In April 1984, Olin filed an antidumping petition with respect to cal hypo, and an Antidumping Duty Order was entered in April 1985. ID ¶¶ 622, 625. Unlike a quota, an Antidumping Duty Order does not impose an absolute restriction on the volume of imports. Nonetheless, as the ALJ found, the evidence in this record indicates that the Antidumping Duty Order did have a restraining effect on the vigor of import competition. ID ¶¶ 599-622. Witnesses from Japanese exporters testified that the antidumping findings had restricted the ability of the Japanese firms to compete in the United States. ID ¶¶ 600-04, 607-08, 610-11.[27]

A second qualitative factor raising concern about the likely competitive strength of the Japanese exporters is the significant shift in the yen to dollar currency exchange rate. ID ¶ 634. The Japanese producers, purchasers of isos and domestic producers all regard the exchange rate as relevant in assessing the viability of Japanese competition. ID ¶¶ 632-40. A change in the exchange rate or any other factor that has the effect of significantly increasing the cost of the Japanese product in United States dollars is a circumstance that bears on the probable future effectiveness of Japanese firms as competitors in this market.

In addition, it appears that clear and reliable information of Japanese production capacity is not available. Capacity

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27 Olin criticizes the Administrative Law Judge for relying on import data through 1985 and not considering the level of imports in 1986 and 1987. RB at 41-42. Since the hearing was in March and April 1987, the ALJ could hardly know what the 1987 import levels would be. Olin's brief at page 42 cites only its own proposed findings of fact to support the claim that imports were higher in 1986 than earlier years. These proposed findings of fact in turn cite only anecdotal testimony.

estimates from the Japanese firms are in the record, but Olin claims that the estimates are too closely related to actual production to be entirely reliable. RPF 863-68.[28] Although the evidence does not conclusively establish that Japanese firms are under tight capacity constraints, it equally provides no basis to conclude that those firms have substantial excess capacity that could be used to supply the United States market in the event of a price increase.

Finally, the Japanese Fair Trade Commission found in 1982 that Nissan and Shikoku, the two leading foreign suppliers of isos to the United States market, had fixed the prices of isocyanurates sold in Japan from 1977 through 1981. ID ¶ 812. This circumstance makes it difficult to accept Olin's position that the foreign competitors are the guarantors of competition in the United States market in the event of collusion among the domestic producers.

E. *Other Market Characteristics*

The dry pool sanitizer market has a number of other characteristics that are at least arguably relevant to the assessment of its likely future competitive performance. Some characteristics tend to heighten the concern raised by the extremely high post-merger market concentration. Others may point in the opposite direction, but none of these provides sufficient comfort to alleviate the other concerns about competitive effects.

The Administrative Law Judge found that demand for dry pool sanitizers is relatively inelastic. ID ¶¶ 814-15. A

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28 Although the uncertainty regarding Japanese capacity gives us pause about finding that capacity constraints preclude further exports to the United States, it supports our conclusion that the Administrative Law Judge made an appropriate choice in using actual shipment data as the basis for measuring import competition in the HHI calculations.

homeowner with an existing swimming pool is relatively unlikely to stop or reduce his or her consumption of swimming pool chemicals because of an increase in the price of those chemicals. This relative inelasticity of demand tends to heighten the antitrust concern raised by the market concentration figures because it indicates that price-elevating collusion has the potential to be quite profitable.[29]

The Administrative Law Judge recognized that the relative size of the buyers and the flow of orders may affect the likelihood of collusion. We agree with Judge Hyun that none of the 30 to 40 repackager purchasers of dry sanitizers accounted for a large enough proportion of a supplier's total sales to be able to ensure that the market would perform competitively. ID ¶¶ 822-27.

Olin argues, nevertheless, that the sophistication of the buyers of dry sanitizers will make collusion unlikely. RB at 39. Although "sophistication" is a relatively difficult attribute to quantify, it is possible to compare the relative flexibility of the repackagers and the producers. Given the difficulty of entry in the production of isos and cal hypo, the repackagers could not easily counter a collusive price increase by integrating backward. The manufacturers, on the other hand, likely would find it not nearly so troublesome to expand their packaging and distribution capability to eliminate the role of the repackager. Once the chemical has been manufactured, it seems safe to assume that filling drums

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29 The Administrative Law Judge also found that the relatively high ratio of fixed costs to variable costs in this industry contributes to the likelihood of actual or tacit collusion. ID ¶¶ 816-18. As the respondent points out, there is some academic debate about this circumstance as an indicator of likely competitive behavior, and we do not give it any significant weight.

and smaller packages is relatively easy. Given the respective roles in the industry of manufacturers and repackagers, buyer sophistication appears to be a weak prop to ensure the competitiveness of the market.

Further, the ALJ concluded that the manufacturers do not all sell at the same level of distribution and that this circumstance decreases the likelihood of collusion. ID ¶¶ 839-46. Such a difference may make enforcement of a cartel more difficult if prices must be adjusted to reflect the different levels of trade. R. Posner, *Antitrust Law* 60 (1976). Here as, Judge Hyun found, the manufactures know the cost of the repackaging step, and the adjustment to account for it should not pose a great difficulty for a possible cartel. Finally, as the ALJ found, members of this industry exchange information and monitor prices with sufficient intensity to increase the likelihood of collusion. ID ¶¶ 793-811. The availability of price information is another characteristic that supports our concern about increasing concentration in this market.

V. THE "EXITING ASSET" DEFENSE

Olin argues that the Commission should adopt a novel "exiting asset" defense to Section 7 of the Clayton Act. This defense, which has been proposed as a replacement for the traditional failing company defense, would require proof that absent the merger, the acquired firm's assets would shortly leave the market. *See* Kwoka & Warren-Boulton, *Efficiencies, Failing Firms and Alternatives to Merger: A Policy Synthesis*, 31 Antitrust Bull. 431, 446 (1986).

Olin asserts that the evidence discussed above in Section IIIB in connection with its argument that FMC's market

share overstates its competitive position also establishes the factual basis for the proposed "exiting asset" defense. As we have discussed, however, the evidence does not establish that FMC made the decision to close the isos business in the near future. Quite the contrary, the record indicates that FMC's management continued to operate the facility in the expectation that the facility could at some point be sold. In addition, the record does not contain evidence that FMC's management had conducted an exhaustive effort to sell the package of assets sold to Olin. The record contains no indication that no less anticompetitive alternative to the merger is available. In short, the facts would not support the description of the proposed defense, even if we adopted the defense, and we decline to do so in this case.

VI. DIVESTITURE IS THE APPROPRIATE RELIEF

Judge Hyun ordered Olin to divest the assets acquired from FMC except for the so-called Sulfolane technology to produce cyanuric acid. We think this is appropriate.

Olin argues that the divestiture order is improper and punitive because it requires divestiture of not only the isos production facility, but also the cyanuric acid plant, both of which are located at South Charleston, West Virginia. Olin asserts that the only possible lessening of competition occurred in the market for swimming pool sanitizers, and that cyanuric acid is not such a sanitizer. RB at 51.

Judge Hyun rejected that argument on the ground that divestiture of the cyanuric acid plant together with the isos plant is necessary to ensure the viability of the divested entity. ID ¶ 894. Olin asserts that this judgment is inconsistent with the conclusion that Olin's isos facilities were a viable force in the market even without a cyanuric acid plant.

The purpose of the remedy is to restore the competition that existed before the unlawful acquisition, and divestiture is a simple and sure way to accomplish that. *United States v. E.I. duPont de Nemours & Co.*, 366 U.S. 316, 331 (1961). Complete divestiture is "particularly appropriate" in merger cases. *Ford Motor Co. v. United States*, 405 U.S. 562, 573 (1972). In fashioning a remedy for an unlawful acquisition, the Commission has ordered broad divestiture in order to increase the likelihood of a restoration of competition even if changed circumstances have made a complete restoration impossible. *See RSR Corp.*, 88 F.T.C. 800, 892-97 (1976), *aff'd, RSR Corp. v. FTC*, 602 F.2d 1317 (9th Circ. 1979), *cert. denied*, 445 U.S. 927 (1980).

The isos and cyanuric acid facilities are located at the same plant in South Charleston, West Virginia. No suggestion has been made that FMC ever offered, or even considered offering, the cyanuric acid plant for sale separate from the isos plant. Olin failed to introduce evidence that the two facilities are separate, stand-alone operations, rather than integrated facilities that share common facilities for power, emission control, receiving and shipping, and other functions. The record does not support a conclusion that the isos plant would be technically and functionally viable separate from the cyanuric acid plant, quite apart from the question whether it would be commercially viable. Since the objective of requiring divestiture is to create a new competitor in this market, we must ensure that the package of assets divested is sufficient to give its acquiror a real chance at competitive success.

* * *

We conclude that Olin's acquisition of FMC's swimming pool chemical business is likely substantially to lessen competition in the markets for dry pool sanitizers and isocyanurates in violation of Section 7 of the Clayton Act and Section 5 of the FTC Act. We further conclude that divestiture of all assets covered by the Asset Maintenance Agreement, except the Sulfolane process, is the necessary and appropriate remedy.

ISSUED: June 13, 1990.